Tobii PCEye Go
User's Manual

tobii dynavox

User's manual Tobii PCEye Go

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The following products are protected by U.S. Patent 7,572,008:

- Tobii PCEye Go

You can locate the Type of Tobii PCEye Go device on the label on the back side.

Table of Contents

1 Introduction 6
1.1 Explanation of Admonitions 6
1.2 Symbols and Markings 6
1.3 Intended Use 6
1.4 Package Contents 7
2 Safety 8
2.1 Mounting Warning 8
2.2 Emergency Warning 8
2.3 Infrared Warning 8
2.4 Epilepsy Warning 8
2.5 Magnetic Field Warning 8
2.6 Child Safety 9
2.7 Do not Open the Tobii PCEye Go 9
2.8 Gaze Interaction 9
3 Getting Started 10
3.1 The Tobii PCEye Go Installation Guide 10
3.2 Mounting the Tobii PCEye Go to your Monitor/Laptop 10
3.3 The Tobii PCEye Go Configuration Guide 11
3.4 Software Updates 13
4 Using the Tobii PCEye Go 14
4.1 Positioning 14
4.1.1 Track Box 14
4.1.2 Track Status Viewer 15
4.1.2.1 Showing Track Status 15
4.1.3 Positioning Guide 15
4.2 Using Windows Control 16
4.2.1 Windows Control Type 16
4.2.2 Starting and Disabling Windows Control 17
4.2.3 Using Gaze Selection 17
4.2.3.1 Gaze Selection Taskbar 17
4.2.3.2 Task Buttons 19
4.2.3.3 Functions Overlay in Windows 7 20
4.2.3.4 Functions Overlay in Windows 8 20
4.2.3.5 Functions Overlay in Windows 10 22
4.2.3.6 Snap Window/Close App in Windows 8.1 and Windows 10 24
4.2.3.6.1 How to Snap Window/Close App 24
4.2.3.6.2 To Snap More Apps 26
4.2.3.7 Selection Methods — Gaze and Switch 28
4.2.3.7.1 Sticky Tasks & Default Left Click / Tap for Switch 28
4.2.3.7.2 Activating a Task with a Keyboard button instead of a Switch 29
4.2.3.8 Gaze Keyboard 29
4.2.3.8.1 Keyboard Taskbar 30
4.2.3.8.2 Task Buttons for Keyboard Taskbar 31
4.2.3.8.3 Word Prediction 31
4.2.3.9 Gaze Selection in Combination with Region Based Keyboards 32

4.2.4 Using Mouse Emulation 32
4.2.4.1 Placing the Mouse Emulation Menu 32
4.2.4.2 Clicking with Windows Control in Mouse Emulation Mode 32
4.2.4.3 Magnifying with Windows Control in Mouse Emulation Mode 33
4.2.4.4 Selecting Mouse Emulation Functions 33
4.2.4.5 Pausing Windows Control in Mouse Emulation Mode 33
4.2.4.6 Scrolling with Windows Control in Mouse Emulation Mode 33
4.3 Pause/Resume Gaze Interaction 34
4.4 Tobii PCEye Update Notifier 35
5 Gaze Interaction Settings 36
5.1 Accessing the Gaze Interaction Settings 36
5.2 Calibration 37
5.2.1 Starting Calibration 37
5.2.2 Interrupting Calibration 37
5.2.3 Customizing Active Eye 38
5.2.4 Improving Calibration Point(s) 38
5.2.5 Removing Calibration Point(s) 39
5.2.6 Customizing the Calibration 40
5.2.7 Customizing the Calibration Area 41
5.3 Interaction 42
5.4 User Profile 43
5.4.1 Creating a New Profile 43
5.4.2 Selecting Current User Profile 44
5.4.3 Deleting a Profile 44
5.5 Windows Control 44
5.5.1 Auto Start 44
5.5.2 Windows Control Type 44
5.5.2.1 Gaze Selection 45
5.5.2.2 Mouse Emulation 45
5.5.2.2.1 Mouse Control Speed 45
5.5.2.2.2 Magnifier Size and Zoom 46
5.5.2.2.3 Auto Switch from Right to Left Click 46
5.5.2.2.4 Turn off Scroll Functionality 46
5.5.2.2.5 Custom Cursors 46
5.5.2.2.6 Hide Menu 46
5.6 System Settings 47
5.6.1 System Off-Screen Menu 47
5.6.2 Positioning Guide 47
5.7 System Information 48
5.7.1 Upgrade Eye Tracker Firmware 48
6 Gaze Selection Settings 49
6.1 The General Settings Tab 49
6.2 The Keyboard Settings Tab 50
6.3 The Taskbar Settings Tab 51
6.3.1 Maximize Left Click/Tap 51
7 Product Care 53
7.1 Temperature & Humidity 53
7.1.1 General Use 53
7.1.2 Transportation and Storage 53

7.2 Cleaning 53
7.3 Transporting the Tobii PCEye Go 53
7.4 Disposing of the Tobii PCEye Go 53
Appendix A Support and Warranty 54
Appendix B Compliance Information 55
Appendix C Third Party Accessories 57
Appendix D Technical Specifications 58

1 Introduction

Thank you for purchasing a Tobii PCEye Go device from Tobii Technology!

To ensure the optimal performance of this product, please take the time to read this manual carefully.

1.1 Explanation of Admonitions

In this manual we use three (3) levels of admonitions as follows:

Is used for notifying the user of something important or of something that needs special attention.

Is used to inform of something that could cause harm to, or malfunction of, the equipment.

Is used to inform of something where there could conceivably be a risk of harm to the user if the Warning is ignored.

1.2 Symbols and Markings

This appendix provides information about the symbols that are used on the Tobii PCEye Go, its parts, accessories or packaging.

Symbol or Markings	Description
	Consult User´s Manual
	Dispose of in accordance with your country's requirements.
	CE is the abbreviation of the European Communities and this mark tells customs officials in the European Union that the product complies with one or more of the EC Directives
	This mark is a certification mark employed on electronic products manufactured or sold in the United States which certifies that the electromagnetic interference from the device is under limits approved by the Federal Communications Commission.
IC	IC is the abbreviation of the Industry Canada and this mark tells customs officials in Canada that the product complies with one or more of the Canadian standards.

1.3 Intended Use

The Tobii PCEye Go is a clip-on eye tracker that lets you access and control your computer using only your eyes only. Simply look at the computer screen and select commands by blinking, dwelling or clicking a switch.

Alternatively, control the mouse cursor with your eye movements

The Tobii PCEye Go fits snuggly on your laptop, docks under retail computer screens and can also be inserted into a Tobii EyeMobile bracket and mounted to certain Tablets.

The Tobii PCEye Go gives you a fast, accurate, and hands free way of accessing the many ways a computer can enrich your life. You can pursue your interests and education, express yourself artistically, stay entertained as well as control your TV, DVD, lights and other devices in your surroundings[1].

It is also valuable to help you to re-enter the workplace, to stay in touch with friends and family, to meet new people and to interact with your children.

The Tobii PCEye Go is intended to be used in an indoor environment.

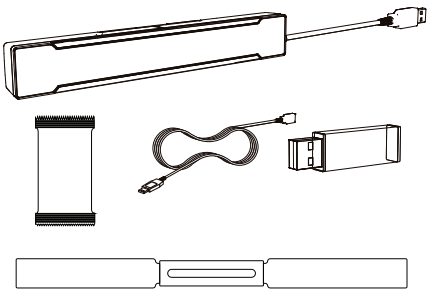
For more information about Screen Sizes, see *Appendix D Technical Specifications*.

Figure 1.1 Tobii PCEye Go

Do not cover the front of the Tobii PCEye Go in any way (with decorations, Post-Its, etc.) as Gaze Interaction will be compromised.

Using an antivirus program is strongly recommended.

1.4 Package Contents



- Tobii PCEye Go
- USB stick with installation script, manuals, and necessary software
- Carrying Case
- Magnetic Mounting Plate (2 pcs) for Tobii PCEye Go
- Mounting Instruction
- USB Extension Cable
- Cleaning Wipe

Only use the items included in the Tobii PCEye Go package, those described in the product documentation and other approved Tobii Accessories in conjunction with the Tobii PCEye Go.

1. Requires an Environmental Control Unit (ECU) and separate senders and receivers, not included with the Tobii PCEye Go.

2 Safety

The Tobii PCEye Go has been tested and approved as compliant to all the Specifications and Standards listed in the *Appendix B Compliance Information, page 55* in this manual and in the *Appendix D Technical Specifications, page 58* -- including, but not limited to, the Medical Device Directive (MDD) 93/42/EEC. Nevertheless, in order to ensure safe operation of your Tobii PCEye Go device, there are a few safety warnings to bear in mind:

2.1 Mounting Warning

The Tobii PCEye Go should be mounted according to MANUFACTURER instructions of approved mounts. Tobii Dynavox or its agents are not liable for damage or injuries to a person or its property due to a Tobii PCEye Go falling from a mounted configuration. The mounting of a Tobii PCEye Go is done entirely at the user's own risk.

The double sided tape supplied with the adhesive Magnetic Mounting Plates is designed to permanently attach the bracket to the monitor/laptop. Attempting to remove the bracket after attaching it using the supplied tape can result in damage both to the monitor/laptop and the bracket.

Do not lick the tape or place any part of the tape or Magnetic Mounting Plate in one's mouth.

Do not mount the Tobii PCEye Go on monitors positioned above the head or face of a users unless using a dedicated "fixed mounting" solution.

2.2 Emergency Warning

Be aware that due to the low, but possible, risk of failure, the Tobii PCEye Go should not be relied upon exclusively as an audio communications, or an environmental control, device in emergencies, as well as in dangerous, or otherwise important, situations. Do not rely on the device for emergency calls or banking transactions. We recommend having multiple ways to communicate in emergency situations. Banking transactions should only be carried out with a system recommended by, and approved according to the standards of, your bank.

2.3 Infrared Warning

When activated, the Tobii PCEye Go emits pulsed infrared (IR) light. Certain medical devices are susceptible to disturbance by IR light and/or radiation. Do not use the Tobii PCEye Go when in the vicinity of such susceptible medical devices as their accuracy or proper functionality could be inhibited.

2.4 Epilepsy Warning

Some people with **Photosensitive Epilepsy** are susceptible to epileptic seizures or loss of consciousness when exposed to certain flashing lights or light patterns in everyday life. This may happen even if the person has no medical history of epilepsy or has never had any epileptic seizures.

A person with Photosensitive Epilepsy would also be likely to have problems with TV screens, some arcade games, and flickering fluorescent bulbs. Such people may have a seizure while watching certain images or patterns on a monitor, or even when exposed to the light sources of an eye tracker. It is estimated that about 3-5% of people with epilepsy have this type of Photosensitive Epilepsy. Many people with Photosensitive Epilepsy experience an "aura" or feel odd sensations before the seizure occurs. If you feel odd during use, move your eyes away from the eye tracker.

2.5 Magnetic Field Warning

The Tobii PCEye Go Magnetic Mounting Plates contains magnets. Magnetic fields may interfere with the function of cardiac pacemakers and implantable cardioverter-defibrillators. As a general rule, maintain a minimum distance of 6 inches (15 centimeters) between any item with magnets and your heart device.

The magnets can also shut off the monitor on a laptop if the laptop is equipped with a magnetic sensor to switch off the monitor when closing the laptop. If this happens, shut of the sensor on the laptop.

2.6 Child Safety

The Tobii PCEye Go is an advanced computer system and electronic device. As such it is composed of numerous separate, assembled parts. In the hands of a child certain of these parts have the possibility of being separated from the device, possibly constituting a choking hazard or another danger to the child.

Young children should not have access to, or the use of, the device without parental or guardian supervision.

2.7 Do not Open the Tobii PCEye Go

Non-compliance will result in loss of Warranty! There are no user serviceable components inside. Contact Tobii Dynavox Support if your Tobii PCEye Go is not working properly.

2.8 Gaze Interaction

Some people may experience a certain amount of fatigue (due to intentional eye focusing and hard concentration) or even a dryness of the eyes (due to less frequent blinking) when first getting used to Gaze Interaction. If you are experiencing fatigue or dry eyes start off slowly and limit the length of your Gaze Interaction sessions to your comfort level. Remoisturizing eye drops can be helpful to combat dryness.

3 Getting Started

To start using Gaze Interaction, you must first install the necessary software and drivers from the included USB-stick, mount the Tobii PCEye Go device to its Magnetic Mounting Plates and attach it properly to your device.

Install the software FIRST before connecting the Tobii PCEye Go device to your computer.

Works with PC computers running on a Windows operating system ONLY (Windows Vista, Windows 7, Window 8, Windows 8.1 or Windows 10).

Be aware that there is no virus protection included with the Tobii PCEye Go Software. Be sure to have proper virus protection installed on your computer to safeguard against malfunctions.

The Installation Guide will install the necessary software and drivers for the Tobii PCEye Go.

Will only be run once on each device a Tobii PCEye Go is to be attached to.

The Configuration Guide will assist in configuration of the Tobii PCEye Go.

Can be run several times to change the configuration for the Tobii PCEye Go on the device (such as to change monitors and/or screen sizes).

3.1 The Tobii PCEye Go Installation Guide

The Tobii PCEye Go **Installation Guide** will help you to get started using Gaze Interaction with your computer. It will guide you through the installation of the necessary software for the Tobii PCEye Go and provide Licensing information

1. Insert the included USB-stick into your computer's USB port.
2. Open the USB-stick directory.
3. Run PCEye.exe
4. Follow the instructions within the **Installation Guide**, selecting **Next** to proceed.

3.2 Mounting the Tobii PCEye Go to your Monitor/Laptop

Wait **1 hour** for the glue on the Magnetic Mounting Plate to **set** before attaching the Tobii PCEye Go to the Magnetic Mounting Plate on the screen / monitor.

To mount the Tobii PCEye Go properly to your computer follow the instructions in the software **Installation Guide** (also present in the software **Configuration Guide**) and use the included **Tobii PCEye Go Mounting Guide**.

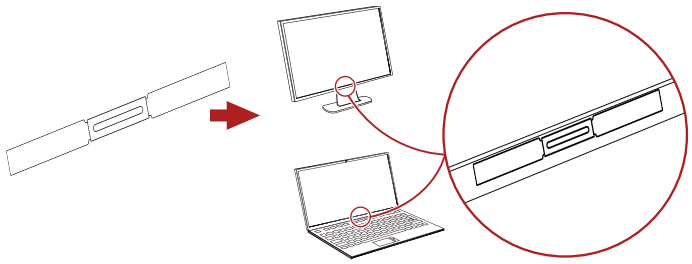


Figure 3.1 Attaching the Magnetic Mounting Plate

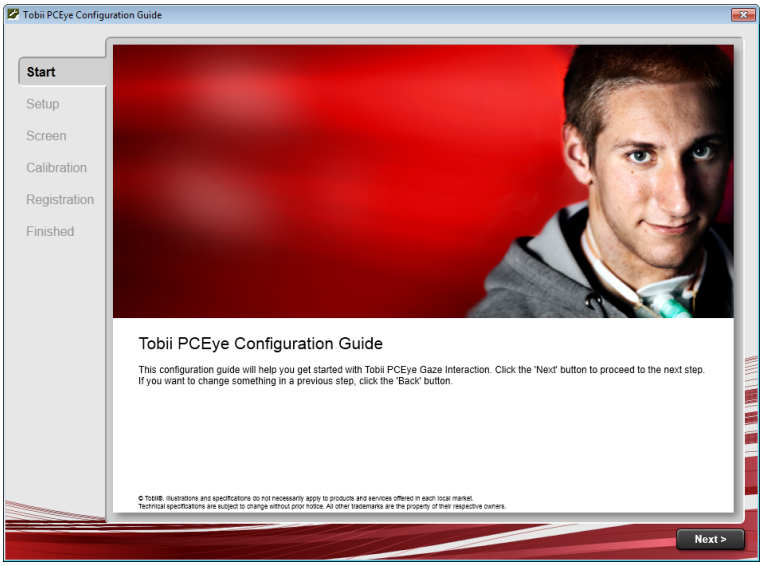
Wait **1 hour** for the glue on the Magnetic Mounting Plate to **set** before attaching the Tobii PCEye Go to the Magnetic Mounting Plate on the screen / monitor.

If the included extension cable for the Tobii PCEye Go is too short, use a “Powered USB” Hub or Port for best performance.

5. After you have mounted the Tobii PCEye Go properly, attach the USB connector to your computer.
6. The Tobii PCEye Go Configuration Guide will open automatically.

3.3 The Tobii PCEye Go Configuration Guide

Upon restarting your computer after running the Tobii PCEye Go **Installation Guide**, attaching the Magnetic Mounting Plate (s) and Tobii PCEye Go to your computer and connecting the USB cable, the Tobii PCEye Go **Configuration Guide** will open automatically.


Tobii PCEye Configuration Guide
Start
Setup
Screen
Calibration
Registration
Finished
Tobii PCEye Configuration Guide
This configuration guide will help you get started with Tobii PCEye Gaze Interaction. Click the 'Next' button to proceed to the next step.
If you want to change something in a previous step, click the 'Back' button.
Next >

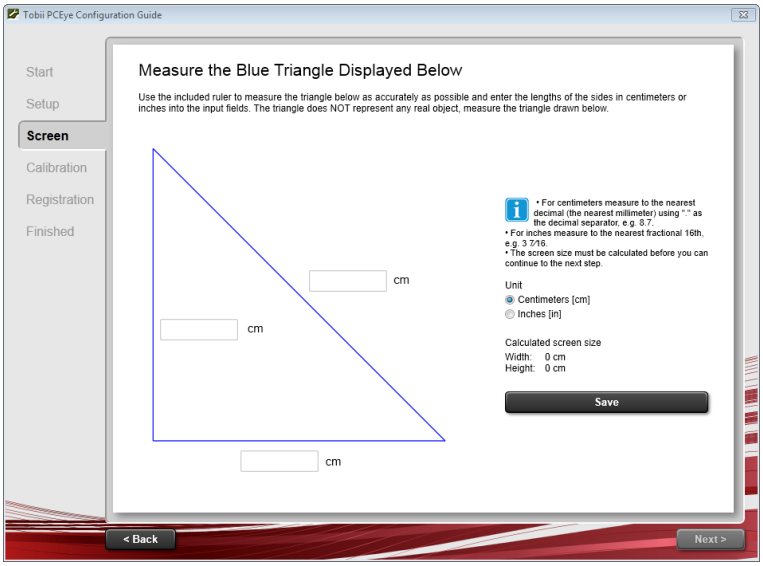
The Configuration Guide will help you to get started using Gaze Interaction on your computer.

It will assist you in the areas of:

- Monitor choice and screen size
- Positioning
- Calibration
- Settings

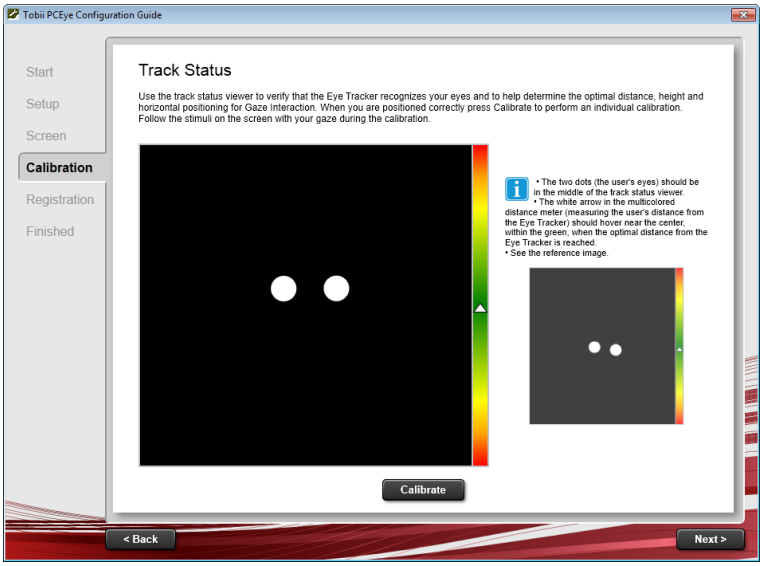
Follow the instructions on each page of the **Configuration Guide**, select **Next** to move to the next page of the Guide.

Pay particular attention to the **Screen** page and the **Calibration** page of the Configuration Guide. In both cases you must complete the information, or tasks, requested of you before you are able to select **Next**.


Tobii PCEye Configuration Guide
Start
Setup
Screen
Calibration
Registration
Finished
Measure the Blue Triangle Displayed Below
Use the included ruler to measure the triangle below as accurately as possible and enter the lengths of the sides in centimeters or inches into the input fields. The triangle does NOT represent any real object, measure the triangle drawn below.
cm
cm
cm
• For centimeters measure to the nearest decimal (the nearest millimeter) using "." as the decimal separator, e.g. 8.7.
• For inches measure to the nearest fractional 16th, e.g. 3 7/16.
• The screen size must be calculated before you can continue to the next step.
Unit
Centimeters [cm]
Inches [in]
Calculated screen size
Width: 0 cm
Height: 0 cm
Save
< Back
Next >

On the **Screen** page be sure to measure the actual blue lines making up the triangle on the screen with the included ruler on the side of the Tobii PCEye Go Mounting Guide and fill in their numbers in the spaces provided. Then select Save.

DO NOT attempt to measure the physical screen size of your computer. The numbers of the measured lines from the triangle will be extrapolated into the size of the physical screen by the software.


Tobii PCEye Configuration Guide
Start
Setup
Screen
Calibration
Registration
Finished
Track Status
Use the track status viewer to verify that the Eye Tracker recognizes your eyes and to help determine the optimal distance, height and horizontal positioning for Gaze Interaction. When you are positioned correctly press Calibrate to perform an individual calibration. Follow the stimuli on the screen with your gaze during the calibration.
• The two dots (the user's eyes) should be in the middle of the track status viewer.
• The white arrow in the multicolored distance meter (measuring the user's distance from the Eye Tracker) should hover near the center, within the green, when the optimal distance from the Eye Tracker is reached.
• See the reference image.
Calibrate
< Back
Next >

On the **Calibration** page, you must calibrate before moving on to the next page. Follow the instructions and select **Calibrate**. Without calibration, you will be unable to finish the **Configuration Guide** and Gaze Interaction will not work properly on your computer.

- Select Finish on the final page of the **Configuration Guide** and your settings and configurations will be saved for future use.

The **Configuration Guide** will automatically launch if configuration changes to your system have been detected.

All future settings, profile control, and calibrations will be controlled by, and can be accessed from, **Tobii Gaze Interaction Settings** (see *4 Using the Tobii PCEye Go, page 14* for information about **Tobii Gaze Interaction Settings**)

3.4 Software Updates

To check for software updates for the Tobii PCEye Go, please use the Tobii PCEye Update Notifier, see *4.4 Tobii PCEye Update Notifier , page 35* for more information, or visit the Tobii website: http://www.tobii.com

4 Using the Tobii PCEye Go

4.1 Positioning

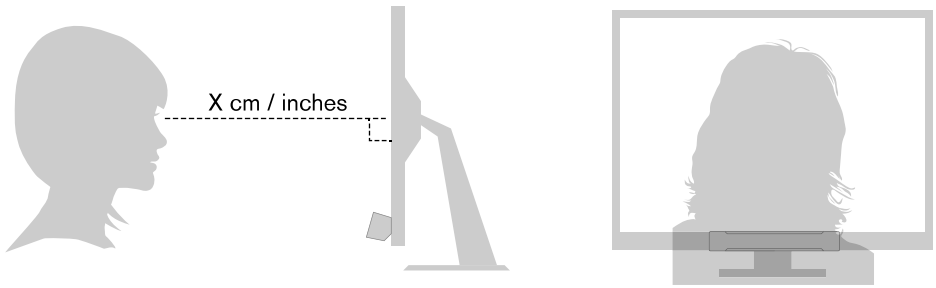


Figure 4.1 Positioning

The mounted Tobii PCEye Go attached to its Magnetic Mounting Plates and to your device is designed to work optimally when it is parallel to the user's eyes at a distance from about 45 — 90 cm (18 to 35 inches) for Tobii PCEye Go, see *Figure 4.1 Positioning, page 14* or *Figure 4.2 Positioning when Users Leaning Sideways or Those Lying Down, page 14*.

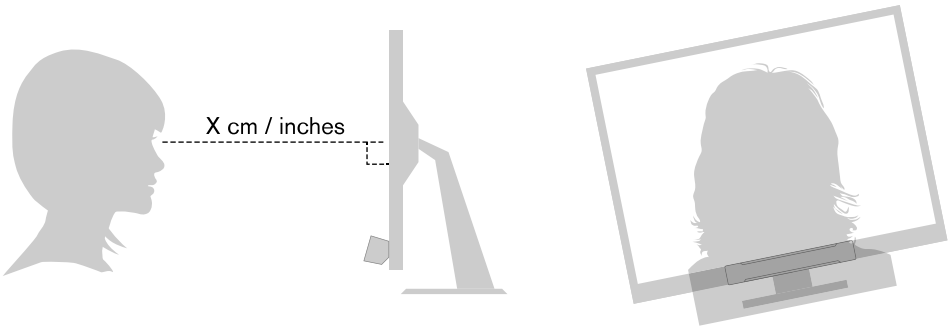


Figure 4.2 Positioning when Users Leaning Sideways or Those Lying Down

This means that for those users leaning sideways or those lying down the Tobii PCEye Go with monitor and computer device also needs to be tilted in order to keep the users eyes parallel to the screen and at the optimal distance, see *Figure 4.2 Positioning when Users Leaning Sideways or Those Lying Down, page 14*.

Make sure the user is placed comfortably in relation to the optimal positioning of, and distance from, the unit. Be aware also that the user's comfort, as well as the Gaze Interaction performance, will be enhanced if the sun is not shining directly on the screen or into the user's eyes.

The optimal distance that a user should be from the Tobii PCEye Go mounted on a monitor/laptop differs depending on the size of the screen. The user should be positioned at the optimal distance to allow for the best possible Gaze Interaction.

Generally, the larger the size of the screen, the greater the distance the user should be from the Eye Tracker / Screen combination for optimal Gaze Interaction.

Smaller than a 10 inch screen and larger than a 27 inch screen should not be used for optimal Gaze Interaction, for more information see *Appendix D Technical Specifications, page 58*.

4.1.1 Track Box

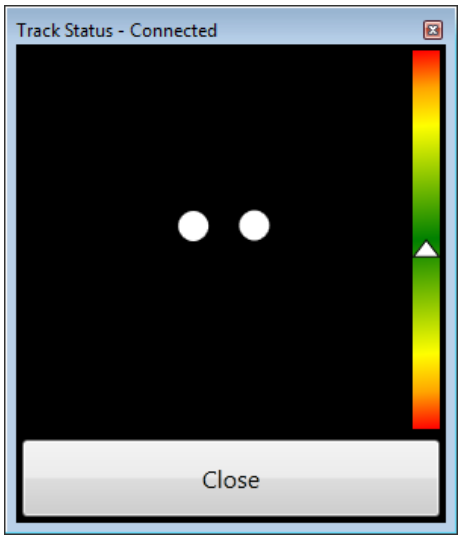
The Tobii PCEye Go allows for extensive Freedom of Head Movement. Once the Tobii PCEye Go is properly calibrated and placed in front of the user, no further adjustments are required.

The Tobii PCEye Go produces an industry leading sized track box with the approximate dimensions of 30 cm × 20 cm × 20 cm / 11.8 in × 7.9 in × 7.9 in (Width × Height × Depth). The Track Box is an invisible box positioned approximately 60 cm (23.5 in) straight out from a point just above the middle of the screen.

At 70 cm (27.5 in) the Tobii PCEye Go allows for lateral Freedom of Head Movement in an area of about 50 × 36 cm (20 × 14 in).

In order to function properly for Gaze Interaction the user needs at least one eye in the track box at all times.

4.1.2 Track Status Viewer



Use the Track Status viewer (see *4.1.2.1 Showing Track Status , page 15* for more information on how to open the Track Status viewer) to help determine the optimal height and horizontal positioning for Gaze Interaction with the Tobii PCEye Go.

- Ideally, the two dots that represent the user's eyes should be in the middle of the Track Status viewer.
- Use the distance meter on the right hand side of the Track Status viewer to determine the optimal distance the user should be from the Tobii PCEye Go.
- The white triangle in the distance meter should hover near the center, within the green, when the optimal distance from the Tobii PCEye Go is reached.

For information about calibration of the Tobii PCEye Go see *5.2 Calibration, page 37*. Also check the lighting conditions, related to what is mentioned above, when calibrating.

4.1.2.1 Showing Track Status

The track status viewer is a window/dialog where you can verify that the Gaze Interaction recognizes your eyes and that you are well positioned in front of the device.

Open the track status viewer in one of the following ways:

- Open **Tobii Dynavox Gaze Interaction Settings > Calibration** and select the **Track status** button.
- Right-click (long-hold finger on icon for touch screen right clicking) on the **Tobii Dynavox Gaze Interaction Settings** icon, , in the Notification area and select **Show track status**.

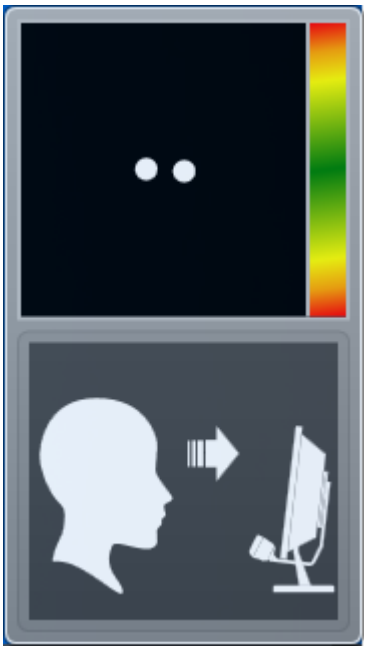
4.1.3 Positioning Guide

For extra assistance in positioning, there is a **Positioning guide** that will show itself automatically in the bottom-right corner of your monitor.

The **Positioning guide** is a visual guide that combines the function of the Track Status viewer with six different image based instructions to help the user with correct positioning.

The 6 instructions direct the user to:

1. Move head down.
2. Move head up.
3. Move head to the right.
4. Move head to the left.
5. Move head closer to the monitor.
6. Move head farther away from the monitor.



Move head closer to the monitor.

Move head to the right.

The **Positioning guide** will automatically disappear when the user's positioning is improved in the way that is directed by the guide.

Some users may not want the **Positioning guide** to pop up every time their eyes leave optimal positioning.

To turn On or Off the automatic **Positioning guide**, see *5.6 System Settings, page 47*

4.2 Using Windows Control

Windows Control allows you to access the desktop and all applications of your Windows computer with Gaze Interaction.

4.2.1 Windows Control Type

Windows Control can be used in two different modes

- **Gaze Selection**
  Gaze Selection is a very precise and fast input method that allows you advanced Windows access but with a simple to use interface. No accidental clicks, no unintentional mouse pointer movements. You can relaxed gaze around at your Windows desktop, your software application, web page or movie, when you have decided what action you want to take next, you select your tool of choice from the toolbar and look back at the target area to make your selection.

  Gaze Selection is ideal for normal to advanced Windows access where you want the full accessibility to control basically any Windows software without the need for fast decisions and movements. It can be controlled using either Gaze (dwell) or switch activation method for even more control and speed.
- **Mouse Emulation**

Mouse Emulation gives you full control of your mouse pointer, just like you would do with a physical mouse input device. You can left click, right click, double click, zoom, scroll and much more. You basically can control any Windows software that works with mouse clicks. With some practice you could achieve as high precision as with any other mouse pointer device. Mouse Emulation is ideal for emergent (sensory) to advanced Windows usage and for software which teaches the usage of eyegaze. You can hide the Mouse Emulation menu if you want to limit the functionality or avoid distraction by pressing the F2 button on your keyboard.

See http://www.tobiidynavox.com/explore/games-activities/ for ideas on some of the software and games used with Mouse Emulation.

To select which type of Windows Control you wish to use and to customize Windows Control:

- Open **Tobii Dynavox Gaze Interaction Settings > Windows Control**, see *5.5 Windows Control, page 44*
- Select your preferred type of Windows Control under **Windows Control Type**

4.2.2 Starting and Disabling Windows Control

To start Windows Control, right-click on the **Tobii Dynavox Gaze Interaction Settings** icon, , in the Notification area and select **Enable Windows Control**.

Or

Double-click on the **Windows Control** shortcut on the desktop, , This will immediately start Windows Control.

To disable Windows Control, right-click on the **Tobii Dynavox Gaze Interaction Settings** icon, , in the Notification area and select **Disable Windows Control**.

You can also start Windows Control from Tobii Dynavox Communicator /Tobii DynaVox Compass or alternative communication software, which has implemented the functions provided by the Tobii Dynavox Eye Control SDK 2

Auto start

- Open **Tobii Dynavox Gaze Interaction Settings > Windows Control**.
- Check the **Auto start Windows control at boot** check box if you want Windows Control to auto start when the Tobii Dynavox Gaze Interaction Software starts.

4.2.3 Using Gaze Selection

The Gaze Selection mode of Windows Control makes it possible for the user to control a standard Windows desktop operating system with a two step selection method which reduces the risks of unwanted clicks. It also prevents the following of the mouse cursor with your gaze as opposed to the controlling of it (there is no floating mouse cursor in Gaze Selection).

1. The first step is to select the desired Task from the docked Taskbar by looking at it.
2. The second step is to look at the desired portion of the screen (or icon on the screen) where you want to execute the Task. An automatic zoom function is enabled, ending in the selection of the icon or execution of the task.

All functions in Gaze Selection are Touch and Mouse enabled which makes it easier for a Caregiver or Assistant to help the user if needed. The Caregiver or Assistant can select a Function/Task or change the settings for the user much easier.

4.2.3.1 Gaze Selection Taskbar

At the top of the Gaze Selection Taskbar there is a Track Status viewer. It allows you to verify that the eye tracker recognizes your eyes and that you are well positioned in front of the device.

The Task Buttons in the Gaze Selection Taskbar can be in three different modes as shown in *Figure 4.3 The Modes for the Gaze Selection Taskbar, page 18*.

- **Normal (Unselected)** - No Task Button for Gaze Selection is chosen.
- **Primary Selection (Blue/black)** - The marked Task Button is selected and the Task will be executed after the automatic zoom when the user looks at the desired position on the screen or icon on it. If the selection method is set to Switch in the Gaze Selection Settings Dialog, the chosen Task Button will still remain active after executing the Task.

  The Functions Overlay Task will not perform any zooming. When selecting Functions Overlay with Primary Selection, the Functions Areas/Commands will be active but not visible.

- **Secondary Selection (Blue/white)** - Same as **Primary Selection** but with a higher precision. **Primary Selection** means that the zoom will progress deeper before the final execution of the Task, making the desired portion of the screen bigger and easier to select within. Activate this mode by resting your gaze on the Task Button until the color changes according to the image below.

  The Functions Overlay Task will not perform any zooming. When selecting Functions Overlay with Secondary Selection, the Functions will be active and the areas of each Function will be visible to the user.

In Windows 8 the colors on the Taskbar will adapt to Windows settings.

The Functions Overlay will not perform any zoom, some other tasks won't either in some situations (scroll, settings, keyboard).

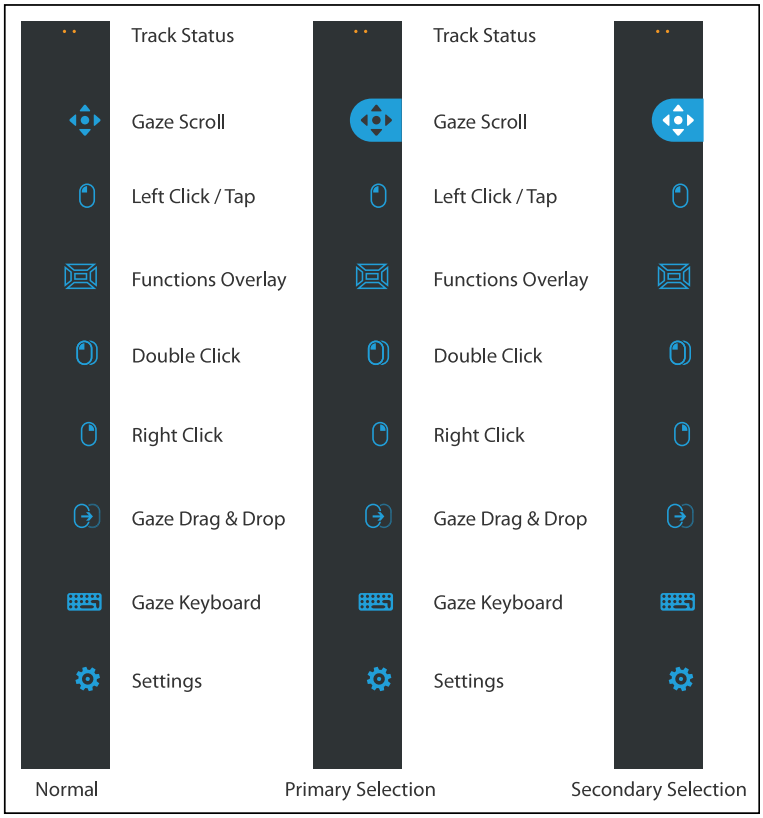
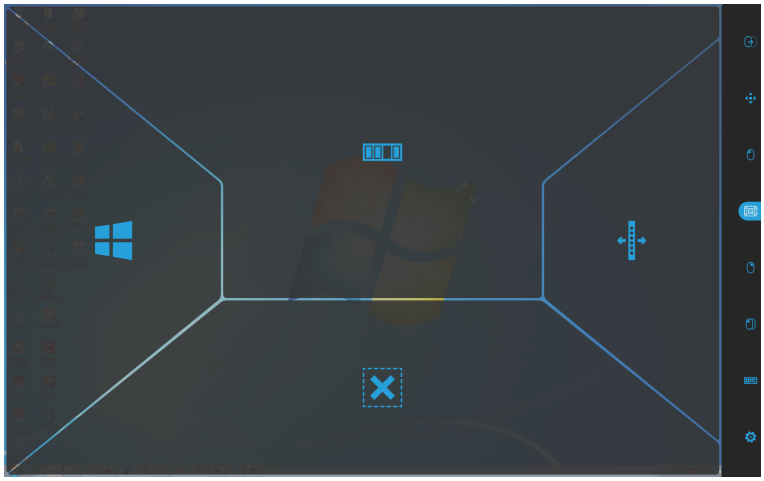


Figure 4.3 The Modes for the Gaze Selection Taskbar

4.2.3.2 Task Buttons

Task Button	Action	Description
	Gaze Drag & Drop	Task that performs two "clicks", where the first one represents the starting position for the drag and the second the drop position (to move objects or select areas). ▪ Select the Task ▪ Look at the object you want to move or the starting point for the area selection ▪ Execute the Gaze Selection (first "click") by Switch or Gaze ▪ Look immediately at the drop position for the object or end point for the area selection. ▪ Execute the second "click" by Switch or Gaze
	Gaze Scroll	Task that, if performed on a scrollable window, enables a gaze-controlled way to scroll the page ▪ Select the Task ▪ Look at any scrollable area and hold your gaze, the Gaze Scroll icon will appear where you looked ▪ Look above the icon to scroll up ▪ Look below the icon to scroll down ▪ Look to the left of the icon to scroll left ▪ Look to the right of the icon to scroll right ▪ While scrolling, look back at the icon (on the screen, not the Taskbar icon) to toggle between up/down or left/right ▪ Look back at the Gaze Selection Taskbar (or outside of the screen) to end scrolling Use the Gaze Scroll Task to scroll vertically and horizontally in Modern UI apps and the Modern UI Windows Start Screen.
	Left Click / Tap	Task that performs a single left-click, or for touch based devices, the equivalent of a single finger Tap. When in Switch mode Left CLick / Tap is Default on and Sticky" (see *4.2.3.7.1 Sticky Tasks & Default Left Click / Tap for Switch, page 28*)
	Functions Overlay	Task that activates the Functions Overlay. Primary Selection activates the Functions Overlay. Secondary Selection activates the Functions Overlay and makes it (and its individual Functions and areas) visible over the top of anything else on the screen to assist in selecting them. The individual Functions available on the Functions Overlay are different for Windows 7 (see *4.2.3.3 Functions Overlay in Windows 7, page 20*), Windows 8 (see *4.2.3.4 Functions Overlay in Windows 8, page 20*) and Windows 10 (see *4.2.3.5 Functions Overlay in Windows 10, page 22*).
	Right Click	Task that performs a single right-click
	Double Click	Task that performs a double left-click. When in Switch mode Double Click is a "Sticky Task" (see *4.2.3.7.1 Sticky Tasks & Default Left Click / Tap for Switch, page 28*)
	Gaze Keyboard	Task that opens an on-screen Gaze enabled keyboard for Gaze typing
	Settings	Task that opens the Gaze Selection Settings Dialog For more information, see *6 Gaze Selection Settings, page 49*

4.2.3.3 Functions Overlay in Windows 7



When selecting the Functions Overlay with **Primary Selection**, the Functions will be active but not visible.

When selecting the Functions Overlay with **Secondary Selection**, the Functions will be active and the areas of each Function will be visible to the user.

The Functions Overlay will not perform any zoom.

Functions	Action	Description
	App Switcher	Function that opens the App Switcher bar, same as Alt-Tab command on a regular keyboard.
	Hide Taskbar	Function that hides the Taskbar for Full Screen view. To Bring back the Taskbar, select or depending on which side the Taskbar is located.
	Windows Button	Function that call up the Windows Start Menu.
	Move Taskbar	Function that moves the Taskbar from right/left.

4.2.3.4 Functions Overlay in Windows 8

Windows 8 Gaze Selection is a revolutionary new method of Gaze Interaction. It is expressly created for the modern and intuitive touch enabled environment of tablets, as well for maximizing and enhancing the complete Gaze Interaction experience of ultrabooks, laptops, and desktop PCs.

It is created as a wholistic, full OS control, Gaze Interaction solution; enabling fully hands-free control of your Windows 8 OS. From emulated touch gestures, click types, taps and side swipes, to Charms and split screen Snapping. From real "Gaze-on/ Hands-off" multitasking to true access and control of all available legacy or current Desktop applications and settings.

Windows 8 Gaze Selection opens the tens of thousands of the current, social, professional, entertaining and educational Windows 8 Modern Apps to Eye Controlled use.

Built around making use of the intuitive power of Microsoft's new touch-centric interface for Windows 8 touch screen devices, the new Gaze Selection brings hands free use into the modern consumer computer environment.

While it is centrally built around fully hands-free use cases, Gaze Selection is also made for even faster access with Switches, as well as being completely touch (and mouse) enabled for multimodal input and third party assistance.

When selecting the Functions Overlay with **Primary Selection**, the Functions Areas/Commands will be active but not visible.

When selecting the Functions Overlay with **Secondary Selection**, the Functions will be active and the areas of each Function will be visible to the user.

The Functions Overlay will not perform any zoom.

Functions	Action	Description
	App Switcher	Function that opens the App Switcher bar where all running Modern User Interface (UI) Apps are visible including the Desktop. All software running in the Desktop, will not be visible here. They are only visible from the Desktop. The App Switcher will not show if there is only one or less Apps open. The App Switcher will not be accessible if the App Switcher is turned Off in the PC Settings.
	Show App Bar	Function that makes the App Bar for active App visible. The App Bar is context based for the active App and therefore will consist of different actions for each App.
	Charms Menu	Function that opens the Charms Menu.
	Move Taskbar	Function that moves the Taskbar from right/left.

Functions	Action	Description
	Snap Window/Close App	Function that performs three (3) different actions. ▪ Select the to move and dock the active App to the selected Target area. ▪ Select the to move the active App to the bottom of the screen and to Close the active App. ▪ Select the to move and dock the active App into Full-screen view. For more information, see *4.2.3.6 Snap Window/Close App in Windows 8.1 and Windows 10, page 24*.
	Windows Button	Function that toggles between the Modern Windows UI and the previous Modern UI App or Desktop. All software running in the Desktop, will not be visible here. They are only visible from the Desktop.
	Hide Taskbar	Function that hides the Taskbar for Full Screen view. To Bring back the Taskbar, select or depending on which side the Taskbar is located.
	Flip Previous App	Function that swipes through all running Modern UI Apps and the Desktop. All software running in the Desktop, will not be visible here. They are only visible from the Desktop.

4.2.3.5 Functions Overlay in Windows 10

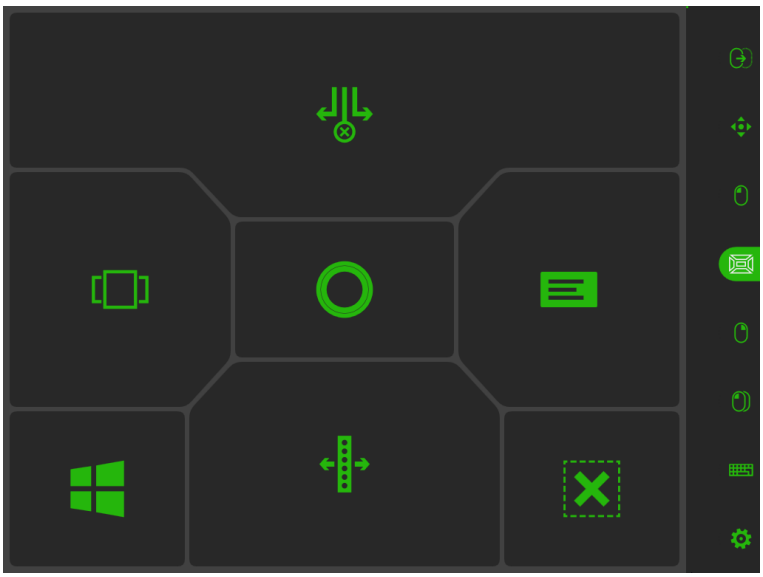
Windows 10 Gaze Selection is a revolutionary new method of Gaze Interaction. It is expressly created for the modern and intuitive touch enabled environment of tablets, as well for maximizing and enhancing the complete Gaze Interaction experience of ultrabooks, laptops, and desktop PCs.

It is created as a wholistic, full OS control, Gaze Interaction solution; enabling fully hands-free control of your Windows 10 OS. From emulated touch gestures, click types, taps and side swipes, to Charms and split screen Snapping. From real "Gaze-on/ Hands-off" multitasking to true access and control of all available legacy or current Desktop applications and settings.

Windows 10 Gaze Selection opens the tens of thousands of the current, social, professional, entertaining and educational Windows 10 Modern Apps to Eye Controlled use.

Built around making use of the intuitive power of Microsoft's new touch-centric interface for Windows 8 touch screen devices, the new Gaze Selection brings hands free use into the modern consumer computer environment.

While it is centrally built around fully hands-free use cases, Gaze Selection is also made for even faster access with Switches, as well as being completely touch (and mouse) enabled for multimodal input and third party assistance.



When selecting the Functions Overlay with **Primary Selection**, the Functions Areas/Commands will be active but not visible.

When selecting the Functions Overlay with **Secondary Selection**, the Functions will be active and the areas of each Function will be visible to the user.

The Functions Overlay will not perform any zoom.

Functions	Action	Description
	Task View	Function that opens the Task View where all running Modern User Interface (UI) Apps are visible. The Task View will not show if there is only one or less Apps open.
	Cortana	Function that opens Cortana. Cortana is your clever new personal assistant, and Cortana can search the web, find things on your PC, keep track of your calendar etc.
	Notifications	Function that opens Notifications.
	Move Taskbar	Function that moves the Taskbar from right/left.

Functions	Action	Description
	Snap Window/Close App	Function that performs three (3) different actions. ▪ Select the to move and dock the active App to the selected Target area. ▪ Select the to move the active App to the bottom of the screen and to Close the active App. ▪ Select the to move and dock the active App into Full-screen view. For more information, see *4.2.3.6 Snap Window/Close App in Windows 8.1 and Windows 10, page 24*. This task is only available if the computer is running Windows in Tablet mode.
	Windows Button	Function that toggles between the Modern Windows UI and the previous Modern UI App or Desktop. All software running in the Desktop, will not be visible here. They are only visible from the Desktop.
	Hide Taskbar	Function that hides the Taskbar for Full Screen view. To Bring back the Taskbar, select or depending on which side the Taskbar is located.

4.2.3.6 Snap Window/Close App in Windows 8.1 and Windows 10

4.2.3.6.1 How to Snap Window/Close App

This task is only available if the computer is running Windows in Tablet mode.

The Snap Window feature in Window 8.0, 8.1 and 10 makes it possible to split and divide the screen to be able to run two to four Modern Apps at the same time. This feature is limited to the resolution of screen of the device, see *Table 4.1 Number of Apps on Screen Windows 8.1 and Windows 10, page 24* for information on how many Apps are possible to run on which screen resolution in Windows 8.1 and Windows 10. The lowest resolution needed to be able to Snap Windows is 1024×768 (Windows 8.1, Windows 10) and 1366×768 (Windows 8.0).

Table 4.1 Number of Apps on Screen Windows 8.1 and Windows 10

Number of Apps	Screen Resolution (Pixels)
2	<1499
3	1500 — 1999
4	>=2000

Windows 8.0 can only run two Apps at the same time.

The Snap Window/Close App can only control visible Apps on the screen.

This will look different depending on how many Apps are Snapped at the same time.

To Snap the Apps:

1. Select the (Functions Overlay) Task from the Taskbar.
2. Select one of the following actions:
   - Select the to move and dock the active App to the selected Target area.
   - Select the to move the active App to the bottom of the screen and to Close the active App.
   - Select the to move and dock the active App in Full-screen view.

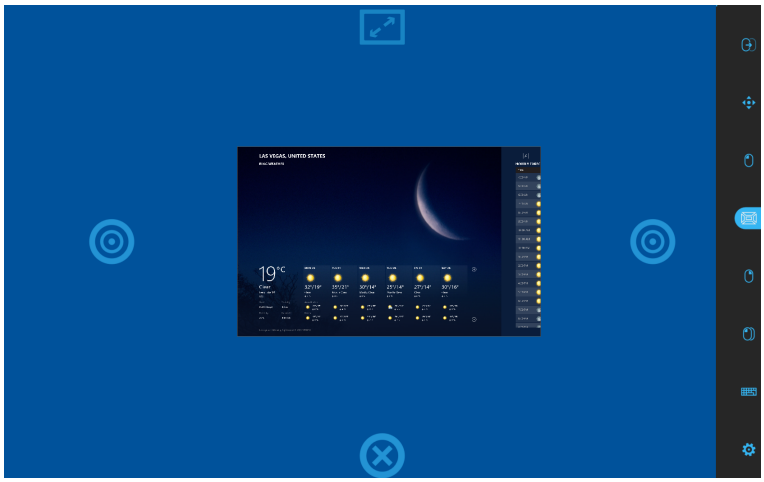


Figure 4.4 Overview

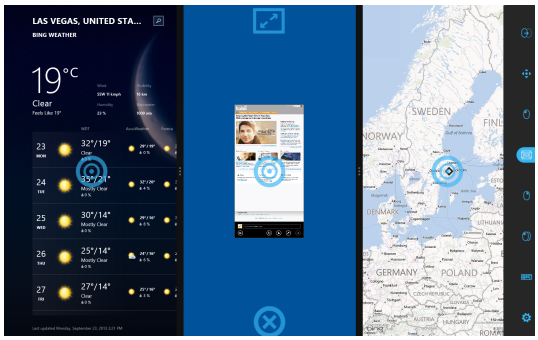
To Move and Close the Apps:

For example: If an App is Snapped in the middle, Select:

1. The function

2. Select the middle area.

3. Select:



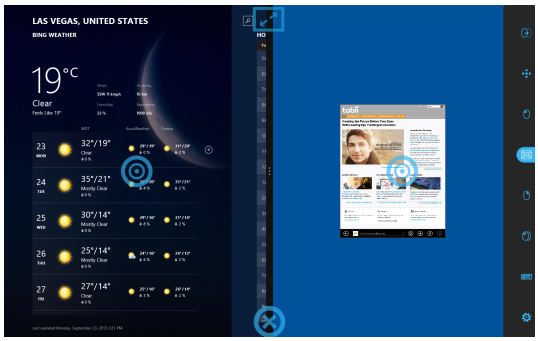
- Select to move the App into (Full-screen) view
- Select one of the (Target) to move the App to the new Target area.
- Drag the App to the (Close) icon in the bottom middle of the screen to close the App.

For example: If an App is Snapped to the left or right, select:

1. The function

2. Select the left or right area.

3. Select:



- Select to move the App into (Full-screen) view
- Select one of the (Target) to move the App to the new Target area.
- Drag the App to the (Close) icon in the bottom middle of the screen to close the App.

4.2.3.6.2 To Snap More Apps

To be able to Snap more than two Apps on the screen, the (Drag and Drop) Task from the Taskbar must be used, see *Table 4.1 Number of Apps on Screen Windows 8.1 and Windows 10, page 24* for more information about how many Apps can be visible at the same time on the screen. With the (Drag & Drop) it is possible to customize the width of each Snap area also.

1. Start an App from the Modern UI Start Screen or from Recent Apps/App Switcher (Windows 8.0 or 8.1) or Task View (Windows 10). It will place itself in the center, see *Figure 4.5 Selected Third App, page 27*.

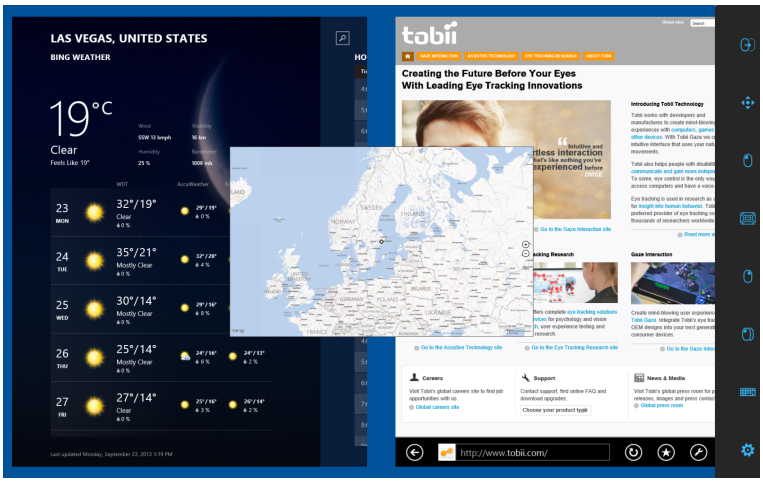


Figure 4.5 Selected Third App

2. Select the (Drag & Drop) Task from the Taskbar.
3. Drag and then Drop the App where you want it to be

   - Right — Select the App with the (Drag 6 Drop) Task from the Taskbar. Drop it to the right side of the screen to place it in the right-hand target, see *Figure 4.6 Snap Right, page 27*
   - Left — Select the App with the (Drag 6 Drop) Task from the Taskbar. Drop it to the left side of the screen to place it in the left-hand target, see *Figure 4.7 Snap Left, page 28*

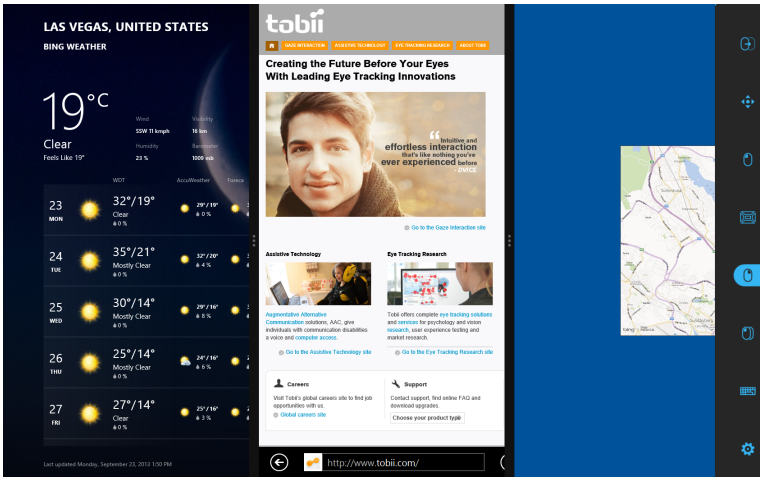


Figure 4.6 Snap Right

Figure 4.7 Snap Left

4.2.3.7 Selection Methods — Gaze and Switch

There are two methods to execute the chosen Task. The method of choice is set from within the Gaze Selection Settings Dialog, see *6 Gaze Selection Settings, page 49*.

Before executing a selection you select a Task from the Taskbar to execute. Gaze at your chosen task until it is highlighted as “Primary” or “Secondary Selection”.

- **Gaze** - To execute the chosen Task, rest your gaze at the desired portion of the screen (or icon on the screen) where you want to execute the Task. An automatic zoom function is enabled, ending in the selection of the icon or execution of the task.
- **Switch** - Two different execution modes.
  - **Single activation of the Switch** - the zoom function will execute in the same way as with the Gaze method and according to the settings made in the Gaze Selection Settings Dialog, see *6 Gaze Selection Settings, page 49*.
  - **Activate and hold the Switch** - the zoom function will zoom continuously and end only upon the release / deactivation of the switch.

The Functions Overlay will not perform any zoom.

When using the Gaze method, you have to look back to the Taskbar to select a new Task after the execution of the Task, even if it is the same as you have just used.

When precision is set to zero in Gaze Selection Settings - no zoom is performed. For more information, see *6 Gaze Selection Settings, page 49*.

4.2.3.7.1 Sticky Tasks & Default Left Click / Tap for Switch

When using the Switch method, a feature is made use of called "sticky tasks". If a Task becomes "sticky" it means that you do not have to look back at the Taskbar if you want to repeat the execution of the selected Task, only if you want to change the Task to another.

When using the Switch method, the Left Click / Tap Task is "sticky" by default. This means that Left Click / Tap is always on and will always be activated by the activation of the switch, if nothing else is selected. If another Task is selected it will be active only once (for one selection) and then Gaze Selection will automatically default back to Left Click / Tap for the subsequent selections.

The exception to this is the Double Click Task; when it is selected when using Switch mode it will also become sticky, meaning that it will stay selected until another Task is selected (after which it will again default back to Left Click / Tap).

This allows for excellent use cases such as quick/continual surfing of the internet by activating the Switch and thus the Left Click / Tap Task once and then repeatedly selecting anything desired, without having to choose the Left Click /Tap Task again multiple times.

4.2.3.7.2 Activating a Task with a Keyboard button instead of a Switch

Selecting the “F12 Keyboard Button”,

, on an attached keyboard will activate a Task selection. It can be used in exactly the same way as a connected switch. For more information on Switches, see *4.2.3.7 Selection Methods — Gaze and Switch, page 28*.

4.2.3.8 Gaze Keyboard

By selecting the Gaze Keyboard button on the Taskbar, the Gaze Keyboard will launch as an on-screen keyboard. The Gaze Keyboard will be positioned either at the top or at the bottom of the screen depending on where the user choose to place it.

The keyboard can be placed on the screen in two different ways with the Primary and Secondary selection of the keyboard task:

- With **Primary** selection:
  1. Activate the Primary Selection of the keyboard task.
  2. Select where to write and the keyboard will be launch at the opposite side.
     If you want to write in the lower part of the screen, the keyboard will be placed at the top and vise versa.

     With dwell usage the keyboard will be placed opposite to where you dwell immediately. If the user is using a switch, the user must first gaze where to type and then hit the switch to place the keyboard in the opposite place.

- With **Secondary** selection:
  – The keyboard will be placed at the bottom of the screen automatically.

Together with the Gaze Keyboard, the Keyboard Taskbar will be launched. For more information, see *4.2.3.8.1 Keyboard Taskbar, page 30*.

The Gaze Keyboard consists of four keyboard pages in a rotating loop. The user can easily switch between the different keyboard pages by selecting the next page buttons located to the far left and right on all pages of the Gaze Keyboard.

The key on the keyboard where the user is gazing will be indicated by a light frame around the character/function

on the key.

The four keyboard pages are:

Figure 4.8 Default Startup Page

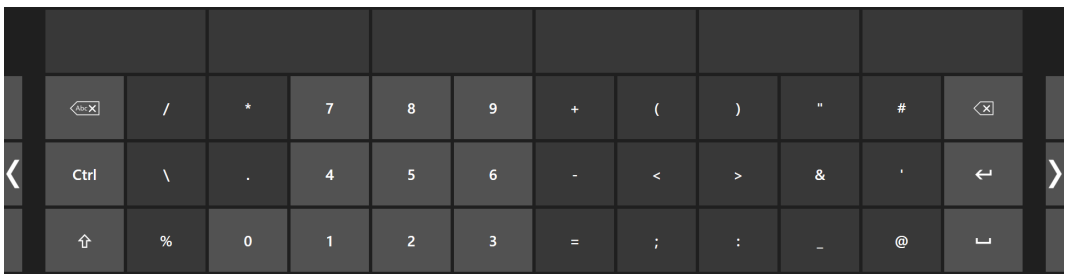


Figure 4.9 First Page to the Right

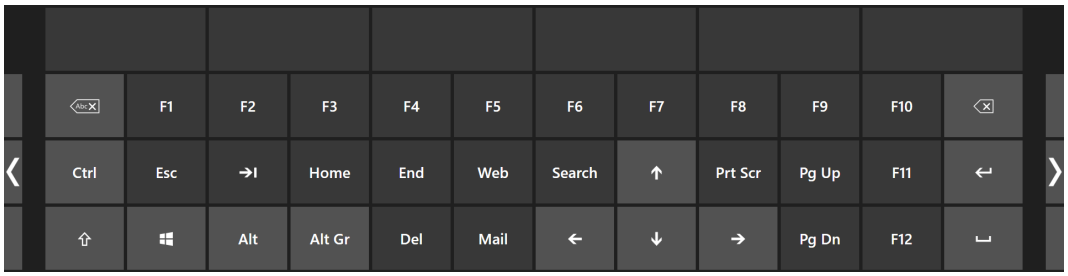


Figure 4.10 Second Page to the Right or Left

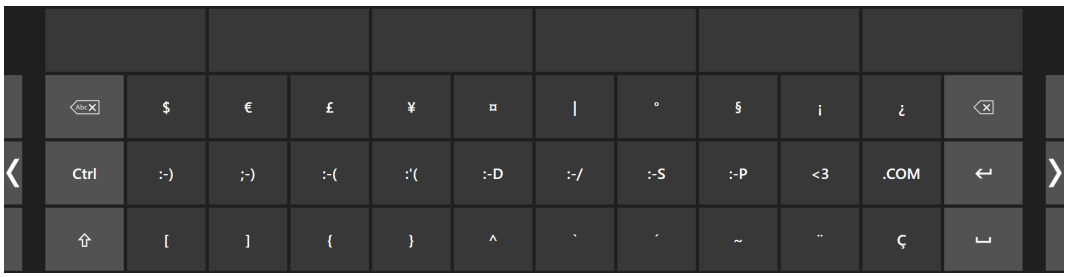


Figure 4.11 First Page to the Left

The Shift, Ctrl, Alt, Win and Alt Gr keys will become "sticky" once selected. This means that they will stay selected until the user selects a new key from the keyboard. They will stay sticky if the next selected key is another sticky key.

To write a letter with an accent:

1. Select the accent
2. Select the character
3. The character will appear with the chosen accent.

The Number keys in the keyboard are positioned as on a Number Pad and can be used in combination with the Alt key to write ASCII characters.

1. Select the Alt key
2. Select the number combination for the ASCII character
3. Select the Alt key
4. The ASCII character will appear.

4.2.3.8.1 Keyboard Taskbar

At the top of the Keyboard Taskbar there is a Track Status viewer the same way as in the Gaze Selection Taskbar. It allows you to verify that the eye tracker recognizes your eyes and that you are well positioned in front of the device.

The Task Buttons in the Keyboard Taskbar can be in three different modes as shown in *Figure 4.12 The Modes for the Keyboard Taskbar, page 31*.

- **Normal (Unselected)** - No Task Button for Gaze Selection is chosen.
- **Primary Selection (Blue/black)** - The marked Task Button is selected and the Task will be executed after the automatic zoom when the user looks at the desired position on the screen or icon on it. If the selection method is set to Switch in the Gaze Selection Settings Dialog, the chosen Task Button will still remain active after executing the Task.
- **Secondary Selection(Blue/white)** - Same as **Primary Selection** but with a higher precision. **Primary Selection** means that the zoom will progress deeper before the final execution of the Task, making the desired portion of the screen bigger and easier to select within. Activate this mode by resting your gaze on the Task Button until the color changes according to the image below.

  Only available for the Left Click function

In Windows 8 the colors on the Keyboard Taskbar will adapt to Windows settings.

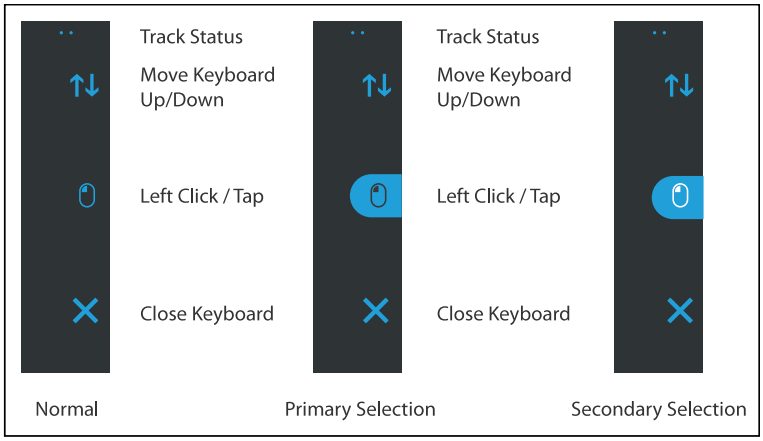


Figure 4.12 The Modes for the Keyboard Taskbar

4.2.3.8.2 Task Buttons for Keyboard Taskbar

Task Button	Action	Description
↑↓	Move Keyboard Up/Down	Task that moves the Keyboard to the top or to the bottom of the screen. To activate the function the Secondary selection must be triggered.
	Left Click / Tap	Task that performs a single left-click, or for touch based devices, the equivalent of a single finger Tap.
✕	Close	Task that closes the keyboard.

4.2.3.8.3 Word Prediction

The word prediction engine that is used in Gaze Selection is from SwiftKey and is commonly used in tablets and smartphones. SwiftKey uses a blend of artificial intelligence technologies that enable it to predict the next word the user intends to type. SwiftKey learns from previous text the user has written and output predictions based on currently input text and what it has learned. The Word Prediction language will change depending on the Keyboard Language setting.

Figure 4.13 Keyboard with Word Prediction Activated

When Word Prediction is in use, see *6 Gaze Selection Settings, page 49* for more information about activating/deactivating Word Prediction, six (6) boxes will appear above the Keyboard. The leftmost box will display the most probable predicted word and the remaining five (5) boxes will contain one predicted word each. To select a predicted word, just select the box with the correct word in it. If you can't find the word you are looking for, just keep on typing and hopefully the word you are looking for will appear after the next character.

If you are using Word Prediction and want to type a word containing an accent, like café, you are often better off letting Word Prediction handle the accent. Simply type “cafe” and you will get a suggestion for “café”.

Typing the accent manually with Word Prediction might give strange looks on the prediction buttons, but the result should come out alright in the document you are typing to.

While the user is typing, the last 5-10 characters will be displayed in blue on the indicated/highlighted key. For more information, see *6 Gaze Selection Settings, page 49*. This feature assists the user in easily spotting misspellings and reduces the need for looking at the actual spot where the text is inserted, thus increasing typing speed.

4.2.3.9 Gaze Selection in Combination with Region Based Keyboards

Gaze Selection can be used in combination with other eye controlled applications. "Gaze Enabled" regions in other applications are active as long as there is no active Task in the Gaze Selection Toolbar. If you are using Gaze Selection with switch the Task Buttons will be "sticky", if you need to deselect a Task just look back at the selected Task for a short moment.

4.2.4 Using Mouse Emulation

The Mouse Emulation mode makes it possible for the user to emulate and control a standard PC mouse pointer on the screen.

To configure the Mouse Emulation, go to Tobii Dynavox Gaze Interaction Settings. For more information, see *5.5.2.2 Mouse Emulation, page 45*

4.2.4.1 Placing the Mouse Emulation Menu

The menu can be placed anywhere on the desktop or docked along the edge of the screen. You dock the Mouse Emulation Menu by dragging it to the edge of the screen. You can also do this by pressing and dragging the Move icon . When the menu is docked you have to look outside the screen to bring up the Mouse Emulation Menu items.

If the Mouse Emulation Menu is docked at the same side as the System Off-Screen Menu (For more information, see *4.3 Pause/Resume Gaze Interaction, page 34*), the Mouse Emulation Menu might not function at all.

4.2.4.2 Clicking with Windows Control in Mouse Emulation Mode

Select what type of mouse click you want to perform from the **Button** drop down list in the Mouse Emulation Menu.

Right-click simulates a right mouse click.

Left-click simulates a left mouse click.

4.2.4.3 Magnifying with Windows Control in Mouse Emulation Mode

To use the magnifier, select the magnifier icon, , in the Mouse Emulation Menu.

If you want to perform a click with the magnifier:

1. Select the magnifier.
2. Select the other options as usual. The options will now have changed to reflect the magnification state.

Right Click Zoom

Left Click Zoom

4.2.4.4 Selecting Mouse Emulation Functions

You can set different functions for clicking:

Mouse cursor

No cursor movement on screen

Single-click

Double-click

Drag and drop

4.2.4.5 Pausing Windows Control in Mouse Emulation Mode

To pause Windows Control select the Pause icon in the Windows Control Menu.

Pause

Pausing Gaze Interaction can also be accomplished by looking at (about) the Tobii logo at the bottom of the Tobii PCEye Go, then selecting, using Gaze Interaction, the pause icon that pops up.

For more information, see *5.6.1 System Off-Screen Menu, page 47*

4.2.4.6 Scrolling with Windows Control in Mouse Emulation Mode

The scroll buttons appear automatically in the upper right corner in any object which can be scrolled. The buttons will only appear on the window which has focus. To activate the scroll select the or icon. If the icons show up when they are not desired you can use the icon to hide them.

When scroll mode is activated you will see a shaded gradient over the window which will be scrolled.

tobii
Eye tracking and gaze interaction by Tobii Technology is revolutionizing computer interaction and research. Gaze interaction helps thousands of people with special needs to communicate and is advancing into mainstream computers. Eye tracking has transformed research and human behavior analysis and is now industry standard in many fields.
Explore the Tobii web by section:
Select your Region:
Global
Japan - 日本
Norway - Norge
China - 中华人民共和国
Germany - Deutschland
North America
Sweden - Sverige
Gaze Interaction
Mainstream computer interface
Advanced driver assistance
Game immersion and control
B2B solutions: CAD, medical imaging and operator control
Eye Tracking Research
Complete eye tracking solutions for:
psychology research
vision research
user experience studies
market research
Eye Tracking Integration OEM
OEM eye tracking solutions
Hardware eye tracking integration
Field application engineering
Custom design projects

To scroll, look in the direction you want to scroll.

To toggle between left/right or up/down scroll, select the or icon for the desired direction.

Scroll functionality can be turned off in
Tobii Dynavox Gaze Interaction Settings > Windows Control > Mouse Emulation > Turn off the automatic scroll functionality.

4.3 Pause/Resume Gaze Interaction

It is possible to Pause/Resume Gaze Interaction.

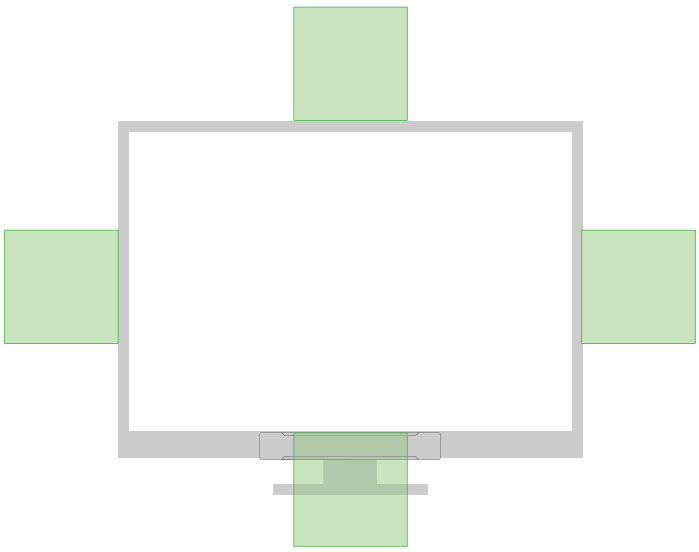


Figure 4.14 System Off-Screen Area

To Pause Gaze Interaction:

1. Make sure the **Pause/Resume** System Off-Screen menu is activated, see *5.6.1 System Off-Screen Menu, page 47*

2. Look at the area where the System Off-Screen menu is configured to be for your Tobii PCEye Go, see *Figure 4.14 System Off-Screen Area, page 34*
   For more information and for how to configure the System Off-Screen menu, see *5.6.1 System Off-Screen Menu, page 47*.
3. Selecting, using Gaze Interaction, the pause icon that pops up.

If the Mouse Emulation Menu is docked at the same side as the System Off-Screen Menu , the Mouse Emulation Menu (For more information, see *5.5.2.2 Mouse Emulation, page 45*) might not function at all.

4.4 Tobii PCEye Update Notifier

The Tobii PCEye Update Notifier is a program that notifies you when the latest software updates for your Tobii Software are available (either automatically, on a regular basis, or manually, at a time of your choosing) and assists you in installing the updates.

The Tobii PCEye Update Notifier will actively search Tobii's sites for version Updates of your software.

To keep your Tobii PCEye device running properly it is highly recommended that you update your Tobii Software on a regular basis.

If an update is found the following Update Notifier window will pop up:

The update or updates available will show themselves in the Step One window of Update Notifier as large button with a green check mark on the right side. You will also be able to see the version number of the software that you currently have and the version number of the update.

If you choose not to download one or more of the available updates you can click on the button of the update you do not want and the check mark will turn into a red "X" mark.

Proceed in the following way:

- Click the **Download** button to download the updates to your Device and continue to Step Two.
- In Step Two, Click the **Install** button to install the chosen updates on your device and proceed to Step Three.
- Step Three informs you that your system has been updated, select the **Done** button to close the Update Notifier.

You can also check for updates for your Tobii software and update them manually using the Tobii PCEye Update Notifier.

To open and activate the Tobii PCEye Update Notifier manually (this opens the Step One window shown above and starts the same automatic update process):

- Navigate in Windows from your desktop to **Start Menu > All Programs > Tobii > PCEye** and select the PCEye Update Notifier icon, .

5 Gaze Interaction Settings

5.1 Accessing the Gaze Interaction Settings

Gaze Interaction Settings is a program for quick and easy access to control functions such as Track Status, Calibration and common settings.

Start **Gaze Interaction Settings** for Windows 7 in one of the following ways:

- Go to **Start menu > All Programs > Tobii Dynavox > Gaze Interaction > Tobii Dynavox Gaze Interaction Settings**.
- Double-click on the **Tobii Dynavox Gaze Interaction Settings** icon, , in the Notification area, or on the shortcut, , on the Desktop (if one has been made).
- Right-click (long-hold finger on icon for touch screen right clicking) on the **Tobii Dynavox Gaze Interaction Settings** icon, , in the Notification area and then select **Settings**.

Start **Gaze Interaction Settings** for Windows 8.1 in one of the following ways:

- Go to **Start menu > Tobii Dynavox**.
- Double-click on the **Gaze Interaction Settings** icon, , in the Notification area, or on the shortcut, , on the Desktop (if one has been made).
- Right-click (long-hold finger on icon for touch screen right clicking) on the **Gaze Interaction Settings** icon, , in the Notification area and then select **Settings**.

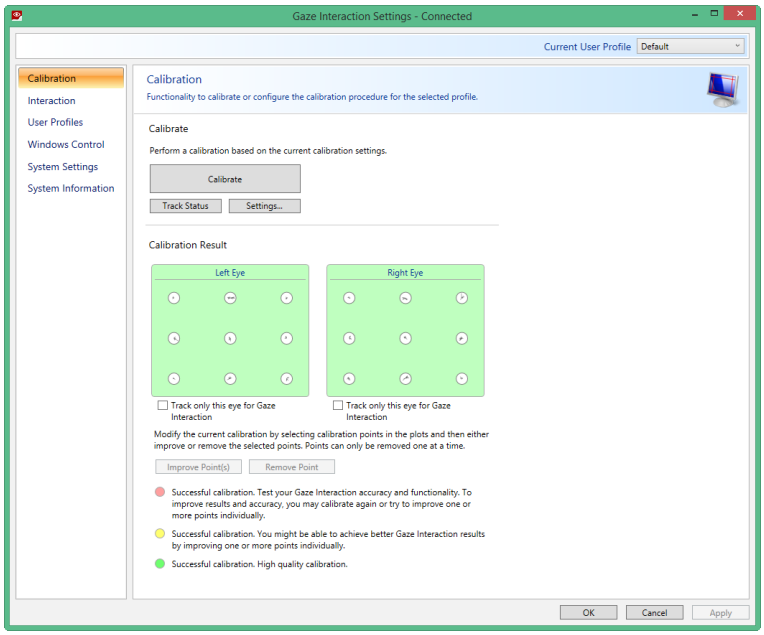
- Through the communication software installed on the device.

In the list to the left in **Gaze Interaction Settings**, select which option you want to change. In the list to the right, the available options will be revealed.

Click **OK** to save changes. This will also close Gaze Interaction Settings.

Click **Cancel** to cancel the changes. This will also close Gaze Interaction Settings.

Click **Apply** to save changes. Gaze Interaction Settings will remain open.


Gaze Interaction Settings - Connected
Current User Profile
Default
Calibration
Interaction
User Profiles
Windows Control
System Settings
System Information
Calibration
Functionality to calibrate or configure the calibration procedure for the selected profile.
Calibrate
Perform a calibration based on the current calibration settings.
Calibrate
Track Status
Settings...
Calibration Result
Left Eye
Right Eye
Track only this eye for Gaze Interaction
Track only this eye for Gaze Interaction
Modify the current calibration by selecting calibration points in the plots and then either improve or remove the selected points. Points can only be removed one at a time.
Improve Point(s)
Remove Point
Successful calibration. Test your Gaze Interaction accuracy and functionality. To improve results and accuracy, you may calibrate again or try to improve one or more points individually.
Successful calibration. You might be able to achieve better Gaze Interaction results by improving one or more points individually.
Successful calibration. High quality calibration.
OK
Cancel
Apply

Anywhere you see this icon, , there is an information box with additional information for the feature.

5.2 Calibration

This section will describe how to calibrate an individual, enabling optimal Gaze Interaction with the Tobii PCEye Go device.

5.2.1 Starting Calibration

The calibration can be started in one of the following ways:

- Open **Gaze Interaction Settings > Gaze Interaction** and then select the **Start Calibration...** button.
- Right-click (long-hold finger on icon for touch screen right clicking) on the **Gaze Interaction Settings** icon, , in the Notification area and select **Start Calibration.**

- Through the communication software installed on the device.

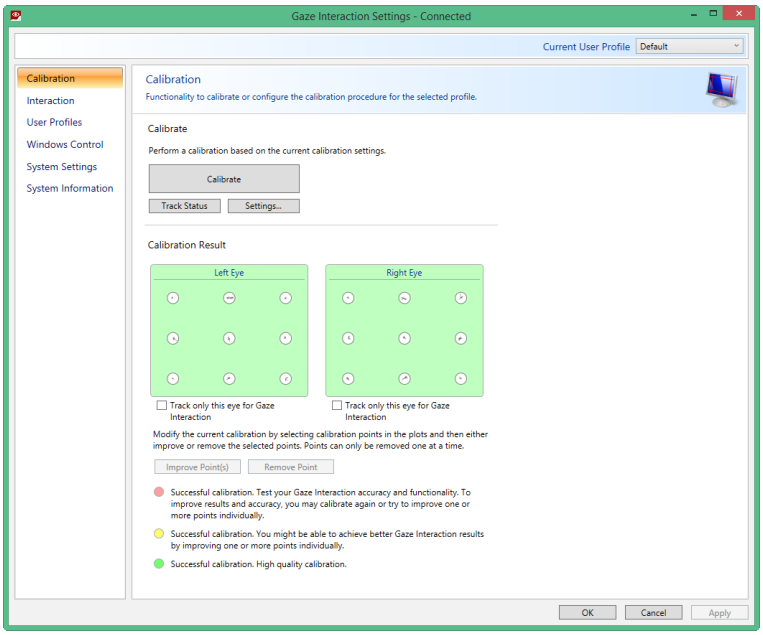
5.2.2 Interrupting Calibration

Interrupt the calibration in one of the following ways:

- Press **Esc**.
- Left-click on the screen using a mouse.
- Touch the screen (on a touch screen device).

5.2.3 Customizing Active Eye

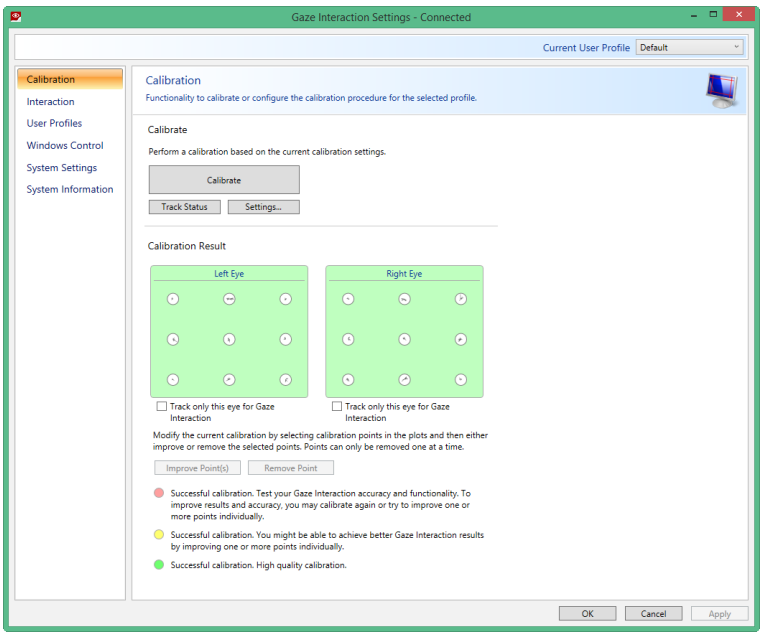
Based on certain conditions, or disabilities, you may only have one eye that functions well with Gaze Interaction. In this case, and if you know which eye is most functional, you can select which eye to track for Gaze Interaction.


Gaze Interaction Settings - Connected
Current User Profile
Default
Calibration
Interaction
User Profiles
Windows Control
System Settings
System Information
Calibration
Functionality to calibrate or configure the calibration procedure for the selected profile.
Calibrate
Perform a calibration based on the current calibration settings.
Calibrate
Track Status
Settings...
Calibration Result
Left Eye
Right Eye
Track only this eye for Gaze Interaction
Track only this eye for Gaze Interaction
Modify the current calibration by selecting calibration points in the plots and then either improve or remove the selected points. Points can only be removed one at a time.
Improve Point(s)
Remove Point
Successful calibration. Test your Gaze Interaction accuracy and functionality. To improve results and accuracy, you may calibrate again or try to improve one or more points individually.
Successful calibration. You might be able to achieve better Gaze Interaction results by improving one or more points individually.
Successful calibration. High quality calibration.
OK
Cancel
Apply

To select the eye you want to be tracked by the eye tracker, follow these steps:

1. Open **Gaze Interaction Settings > Calibration**.
2. Select the **Track only this eye for Gaze Interaction** check box under Left or Right Eye Calibration Result box.

5.2.4 Improving Calibration Point(s)


Gaze Interaction Settings - Connected
Current User Profile
Default
Calibration
Interaction
User Profiles
Windows Control
System Settings
System Information
Calibration
Functionality to calibrate or configure the calibration procedure for the selected profile.
Calibrate
Perform a calibration based on the current calibration settings.
Calibrate
Track Status
Settings...
Calibration Result
Left Eye
Right Eye
Track only this eye for Gaze Interaction
Track only this eye for Gaze Interaction
Modify the current calibration by selecting calibration points in the plots and then either improve or remove the selected points. Points can only be removed one at a time.
Improve Point(s)
Remove Point
Successful calibration. Test your Gaze Interaction accuracy and functionality. To improve results and accuracy, you may calibrate again or try to improve one or more points individually.
Successful calibration. You might be able to achieve better Gaze Interaction results by improving one or more points individually.
Successful calibration. High quality calibration.
OK
Cancel
Apply

After calibration, you may want to improve one or more points.

There is a color scheme used that will help you to understand the quality of your calibration.

All three color statuses are the result of a **successful** calibration.

- If the background color of the Calibration Result is light red, you have achieved a successful, but relatively low quality calibration. You can improve one or more points individually, or recalibrate completely, to achieve better Gaze Interaction results.

  Improving even one (or more) of the calibrations points can significantly improve the calibration.

- If the background color of the Calibration Result is light yellow, you have achieved successful and good quality calibration. You might be able achieve better Gaze Interaction results by improving one or more points individually.
- If the background color of the Calibration Result is green, you have achieved a successful and high quality calibration.

Be aware that no matter what quality of calibration you have achieved you will be able to select **OK** or **Apply** and begin using Gaze Interaction. It is the accuracy and functionality of the Gaze Interaction that is affected by the quality of the calibration results. Try for the best calibration possible.

Remember! In the end it is the personal experience that counts!

The closer the lines within the calibration point are to a dot in the center of the circle of the calibration point, the better the calibration is of that point, .You can choose the points to be improved and calibrate only those points again.

To improve one or more calibration points, follow these steps :

1. Open **Gaze Interaction Settings > Calibration**.
2. Select the point(s) you want to improve under **Calibration Result**.
3. Select the **Improve Point(s)** button and a calibration for the selected point(s) will start.

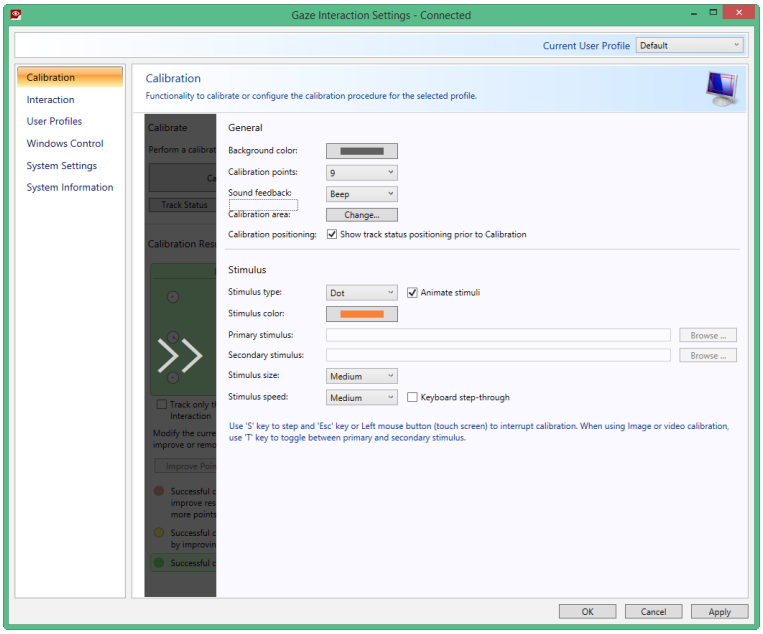
5.2.5 Removing Calibration Point(s)

If there is a calibration point that is consistently bad after calibration (the green lines are scattered all around and outside the circle of the calibration point) you can remove that point completely from the calibration, this *may* improve the calibration of the other points. Be aware that if you remove a point, that area of the screen will be uncalibrated and Gaze Interaction will not function properly there.

To remove one or more calibration points, follow these steps:

1. Open **Gaze Interaction Settings > Calibration**.
2. Select the point(s) you want to remove under **Calibration Result**.
3. Select the **Remove Point(s) button**.

5.2.6 Customizing the Calibration



To customize the calibration, follow these steps:

1. Open **Gaze Interaction Settings > Calibration**.
2. Select the **Settings...** button

General

3. Select calibration background by selecting the background color button and select the desired color.
4. Specify the number of points you want to calibrate with (two, five or nine) from the **Calibration points** drop down list. The higher number of points, the more accurate the calibration.
5. Select if you want to have sound feedback or not from the **Sound feedback** drop down list.

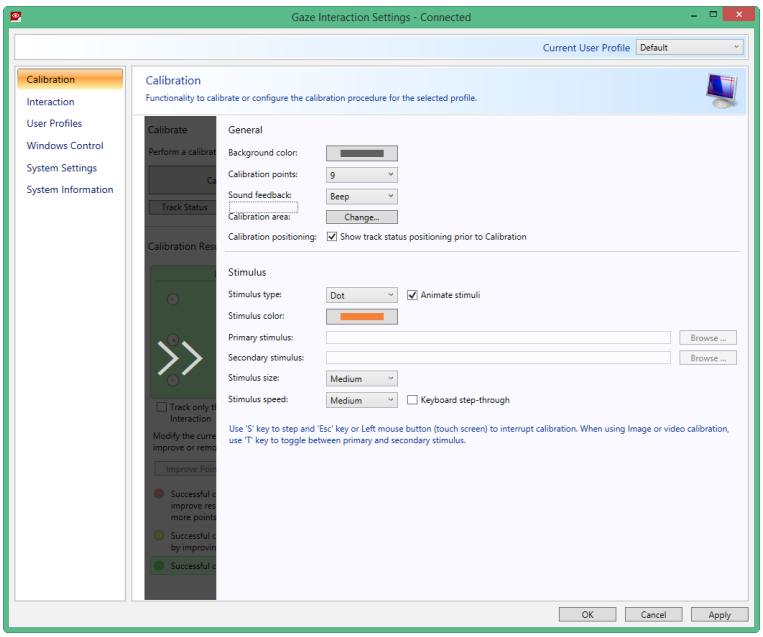
Stimulus

6. Select the stimulus type from the **Stimulus type** drop down list. There are three types available, each with different customizing options:
   - Dot:
     - Select color of the dot by selecting the **Stimulus color** button.
     - Select size of the dot by selecting from the **Stimulus size** drop down list.
     - Select speed of the dot by selecting from the **Stimulus speed** drop down list.
   - Image:
     - Select primary stimulus by selecting **Browse** and selecting an image.
     - Select secondary stimulus by selecting **Browse** and selecting an image.
     - Select size of the image by selecting from the **Stimulus size** drop down list.
     - Select speed of the image by selecting from the **Stimulus speed** drop down list.
   - Video:
     - Select primary stimulus by selecting **Browse** and selecting a video.
     - Select size of the video by selecting from the **Stimulus size** drop down list.
     - Select speed of the video by selecting from the **Stimulus speed** drop down list.
7. Check the **Animate stimuli** check box if you want the stimuli to be animated (as opposed to static).

8. If you want to control the calibration, i.e. decide when to move the calibration stimuli, with a keyboard, check the **Keyboard step-through** check box.
   - For **Keyboard step-through,** use the 'S' key to step (to move the calibration stimuli) and the 'Esc' key, the Left mouse button or touching the touch screen to interrupt calibration. When using Image or Video calibration, use the 'T' key to toggle between primary and secondary stimulus images.

To get back from slide in menus, just select the arrows in the greyed out areas.

5.2.7 Customizing the Calibration Area

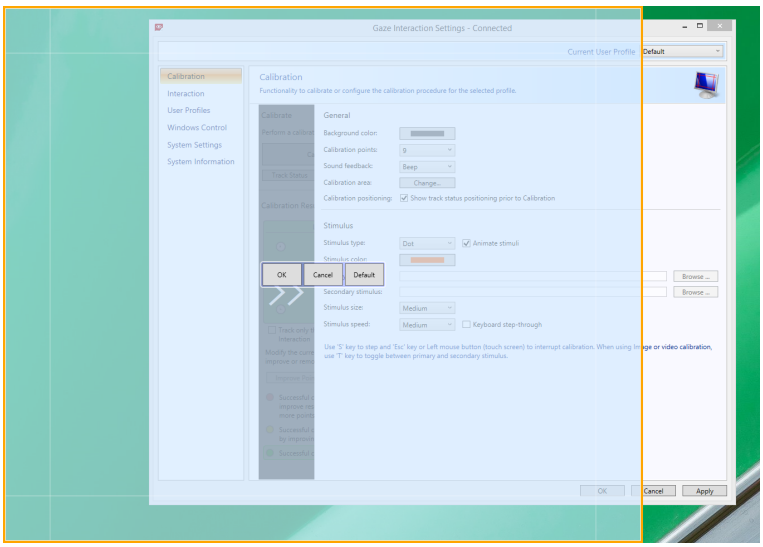


Customizing the calibration area can be useful if you have discovered that the user cannot access certain areas of the screen using Gaze Interaction. By sizing the calibration area to exclude the areas that the user cannot access it can improve the overall calibration.

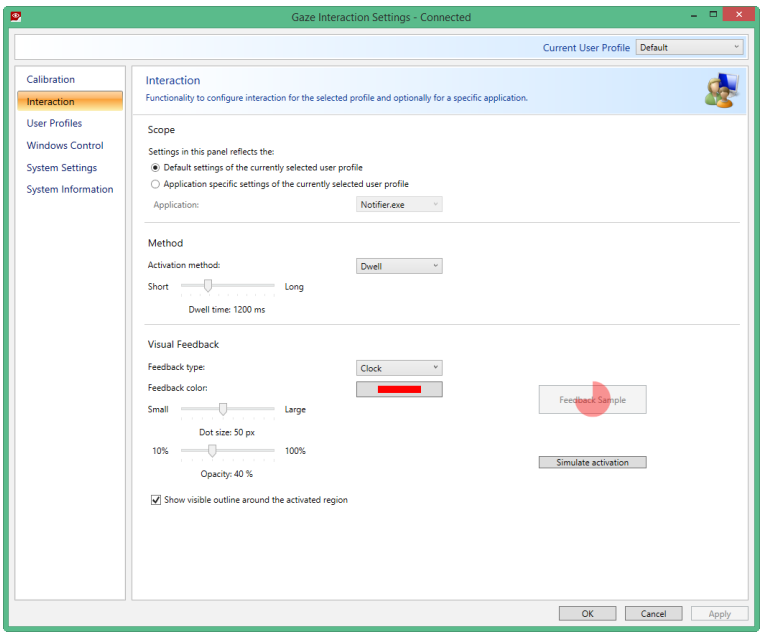
To customize the calibration area, follow these steps:

1. Open **Tobii Dynavox Gaze Interaction Settings > Calibration**.
2. Select the **Settings…** button.
3. Select the Calibration area: **Change...** button.

4. A blue semi-transparent area is displayed on the desktop. You can move and resize the blue area to make it fit your preferred calibration area.



5.3 Interaction



To adapt the interaction method and visual feedback for Gaze Interaction, follow these steps:

1. Open **Gaze Interaction Settings > Interaction.**

Scope

If different settings are needed for different Gaze Interaction applications, make the adaptations here.

2. Select how the interactions settings should be reflected:
   - Select **Default settings of the currently selected user profile** if you want to apply the new settings to the whole user profile and not only to a particular application.
   - Select **Application specific settings of the currently selected user profile** if you want to apply the new settings to a specific application of a user profile. Then select the available application in the **Application** drop down list.

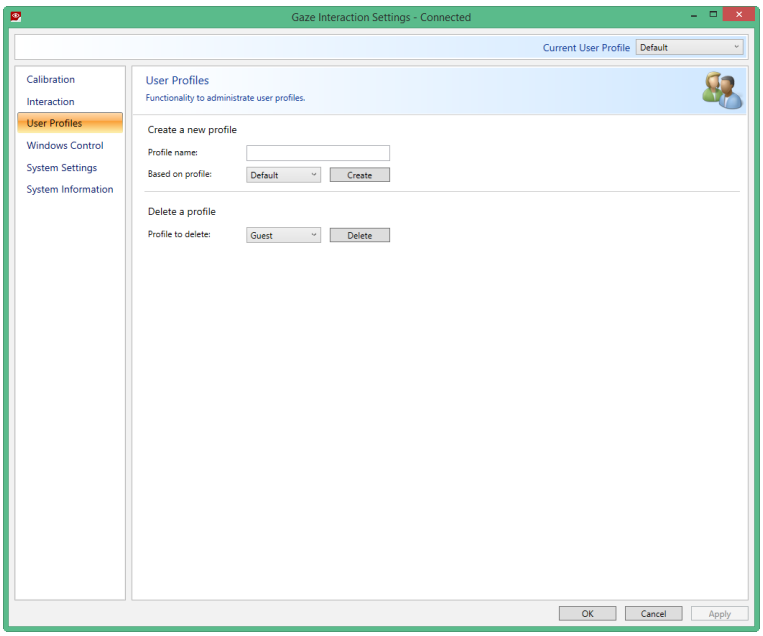
Method

3. Select the activation method from the **Activation method** drop down list. There are three methods available, each with different activation times:
   - Dwell. Adjust the dwell time by moving the **Dwell time** slider.
   - Switch. Adjust the minimum time for a click duration and the minimum time between clicks by moving the respective slider.
   - Blink. Adjust the minimum and maximum duration for a blink by moving the respective slider.

Visual Feedback

4. Select the symbol for visual feedback from the **Dwell feedback type** drop down list.
5. Select the color of the feedback symbol in the **Feedback color** drop down list.
6. Specify the dot size and opacity of the feedback symbol by moving the respective slider.
7. Select the **Show visible outline around the activated region** check box to see a dashed line around the activated area in all instances of Gaze Interaction selection
8. Select **Simulate activation** if you want to see how the activation method will appear on the screen. The example is shown above the **Simulate activation** button.

5.4 User Profile



5.4.1 Creating a New Profile

Use of different profiles allows you to store multiple people's calibrations and feedback preferences on one device. Alternatively, one person might want to store multiple profiles for him/herself if that person wears glasses occasionally or uses multiple means of accessing the device.

To create a new profile:

1. Open **Gaze Interaction Settings**, select **User Profiles**.
2. Enter a new name in the **Profile name** field.
3. Select an existing profile in the **Based on profile** drop down list. The new profile will inherit all settings from the selected profile. Note that if no profiles have been created previously, the only one to select is the default profile.
4. Click **Create** to save the new profile. The new profile is saved directly upon selecting **Create**.

5.4.2 Selecting Current User Profile

To select current user profile:

1. Open **Gaze Interaction Settings**.
2. Select a user profile in the **Current User Profile** drop down list.
3. Select **Apply**

5.4.3 Deleting a Profile

To delete a profile:

1. Open **Gaze Interaction Settings** > **User Profiles**.
2. Select a profile in the **Profile to delete** drop down list.
3. Click **Delete** to delete the selected profile. The profile is deleted directly upon selecting Delete. Note that the default profile cannot be deleted.

The active user can not be deleted.

5.5 Windows Control

Windows Control allows you to access the desktop and all applications of your Windows computer with Gaze Interaction.

5.5.1 Auto Start

To enable Windows Control automatically when the your device starts up:

- Select the **Auto start Windows Control at boot** check box.

To disable Windows Control automatically when the your device starts up:

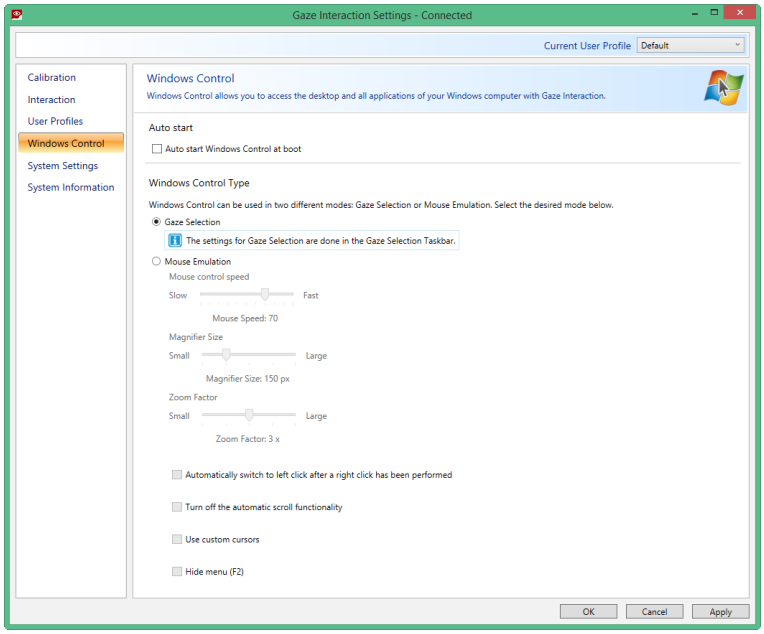
- Select to clear the **Auto start Windows Control at boot** check box.

5.5.2 Windows Control Type

Select which type of Windows Control you wish to use:

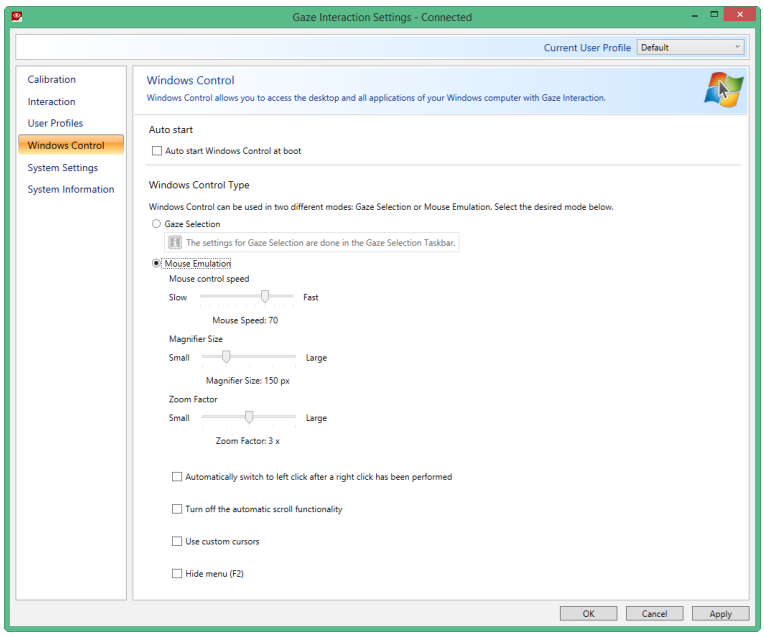
- Gaze Selection — Select the Gaze Selection radio button. For more information about using Gaze Selection, see *4.2.3 Using Gaze Selection, page 17*
- Mouse Emulation — Select the Mouse Emulation radio button. For more information about using Mouse Emulation, see *4.2.4 Using Mouse Emulation, page 32*

5.5.2.1 Gaze Selection



The settings for Gaze Selection are found in the Gaze Selection Taskbar, docked to the screen when Gaze Selection Windows Control is running. Gaze at the settings icon to select it and the Gaze Selection Settings will open. For information about the Gaze Selection Settings, see *6 Gaze Selection Settings, page 49*

5.5.2.2 Mouse Emulation



5.5.2.2.1 Mouse Control Speed

Customize the mouse control speed by moving the **Mouse control speed** slider. Move the slider to the right to increase the speed and to the left to decrease it.

5.5.2.2.2 Magnifier Size and Zoom

Customize the size of the magnifier by moving the **Magnifier Size slider**. Move the slider to the right to increase the size and to the left to decrease it.

Customize the zoom factor by moving the **Zoom Factor** slider. Move the slider to the right to increase the zoom factor and to the left to decrease it.

5.5.2.2.3 Auto Switch from Right to Left Click

Check this check box if you want Windows Control Mouse Emulation mode to automatically switch the desired mouse click selection back to a left click, , after a right click, , has been chosen and performed.

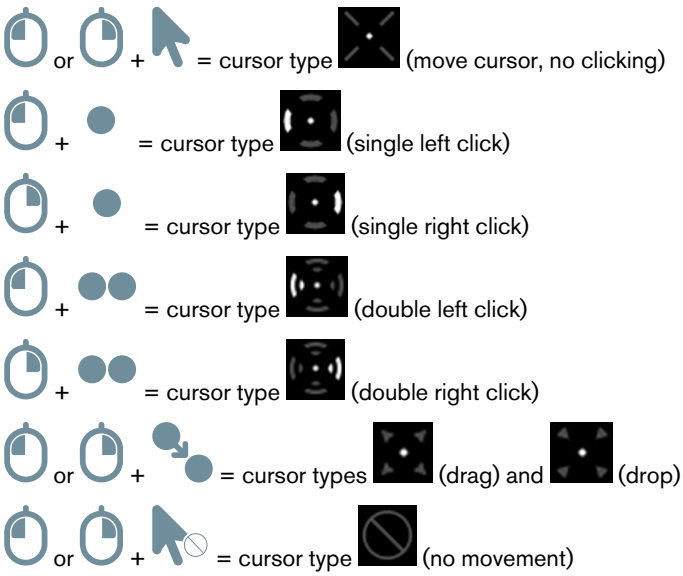
5.5.2.2.4 Turn off Scroll Functionality

Check the **Turn off scroll functionality** check box if you do not want Gaze Interactionscrolling to be active.

5.5.2.2.5 Custom Cursors

Custom cursors is a feature that turns the regular mouse cursor into a number of different cursors when using Windows Control in Mouse Emulation mode.

The different cursors visually represent the type of "mouse click" for Gaze Interaction that you have chosen from the Mouse Emulation Menu (for the definitions of the Mouse Emulation Menu symbols see *4.2.4.2 Clicking with Windows Control in Mouse Emulation Mode, page 32*, *4.2.4.3 Magnifying with Windows Control in Mouse Emulation Mode, page 33* and *4.2.4.4 Selecting Mouse Emulation Functions, page 33*).



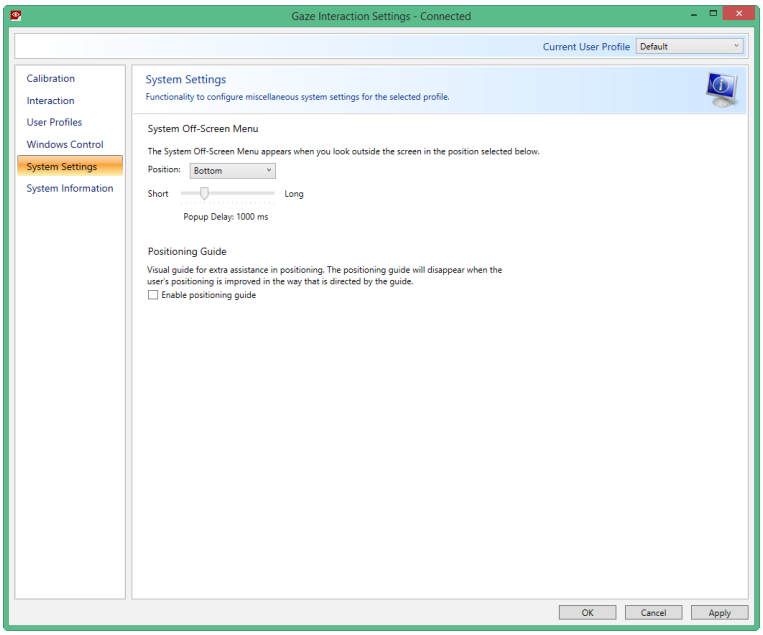
Check the Custom cursors check box to activate custom cursors for Windows Control in Mouse Emulation mode.

5.5.2.2.6 Hide Menu

Check the **Hide Menu** check box if you want the Mouse Emulation menu to be hidden during use. The

(F2) key on the keyboard can also be used to toggle On and Off (hide/show) the Mouse Emulation Menu instantly during use.

5.6 System Settings



5.6.1 System Off-Screen Menu

Select the **Position** Drop down menu to make changes to where the System Off-Screen menu appear on the screen.

The System Off-Screen menu can be set to appear:

- Bottom (Default)
- Top
- Left
- Right
- None

Set the System Off-Screen menu to None to disable the System Off-Screen menu.

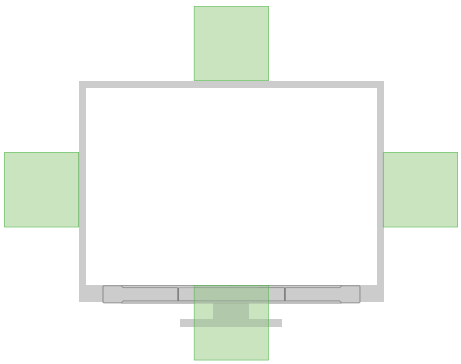


Figure 5.1 System Off-Screen Menu Areas

5.6.2 Positioning Guide

To turn On the Positioning Guide:

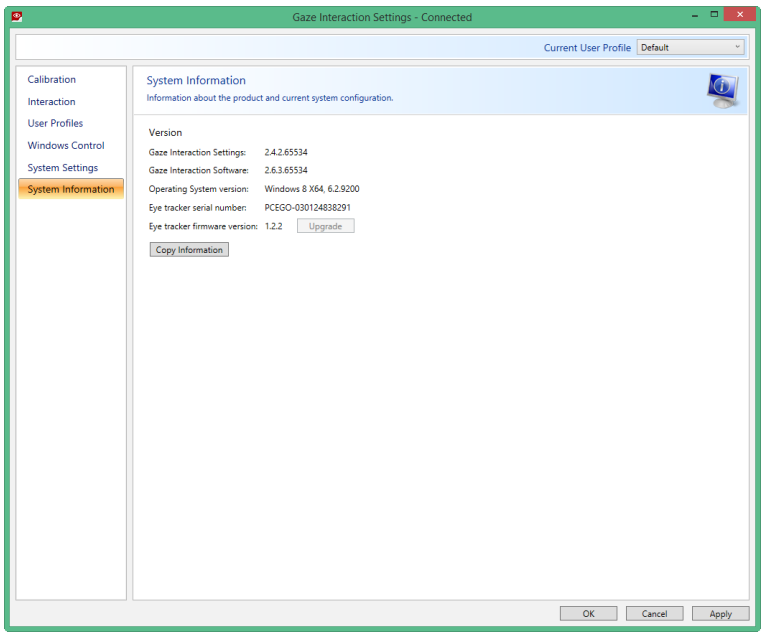
1. Open **Gaze Interaction Settings > System Settings**.
2. Select the **Enable positioning guide** check box.

To turn Off the Positioning Guide:

1. Open **Gaze Interaction Settings > System Settings**.
2. Select to clear the **Enable positioning guide** check box.

For more information about the Positioning Guide, see *4.1.3 Positioning Guide*

5.7 System Information



To view the version and model of the device:

Open the **Gaze Interaction Settings > System Information**.

Please have this information available if you have problems with the device and need to contact Customer Support.

By clicking **Copy all information** you can paste the information into a document (such as Notepad or WordPad) or directly into an e-mail.

5.7.1 Upgrade Eye Tracker Firmware

If there is a new Firmware for the Eye Tracker module, the **Upgrade** button will be selectable.

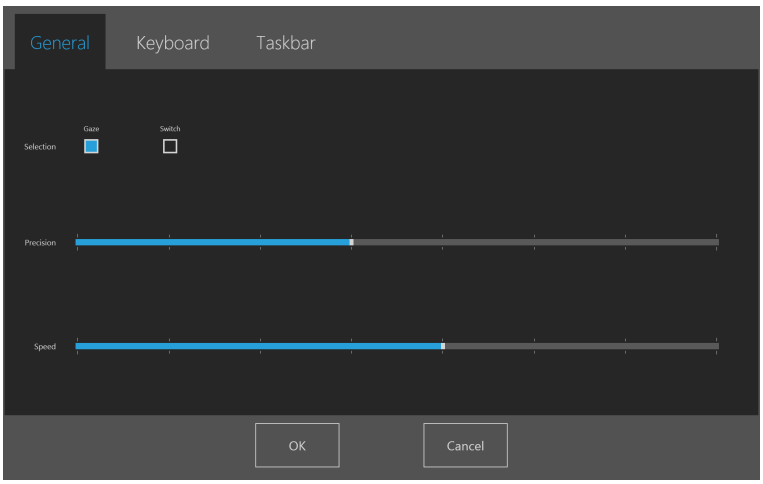
Select the **Upgrade** button to start upgrading the Firmware for the Eye Tracker.

A Pop up notification will be shown when starting the Tobii Dynavox Gaze Interaction Settings if there is a Upgrade for the Eye Tracker Firmware.

6 Gaze Selection Settings

The Gaze Selection Settings Dialog is controlled by Gaze Interaction and the user can make all changes without using a keyboard and/or a mouse.

6.1 The General Settings Tab



Selection

- **Gaze** - Choose Gaze to use your gaze position to activate the zooming function that ends with the execution of the desired Task.
- **Switch** - Choose Switch to use a switch to activate the zooming function that ends with the execution of the desired Task.

Precision

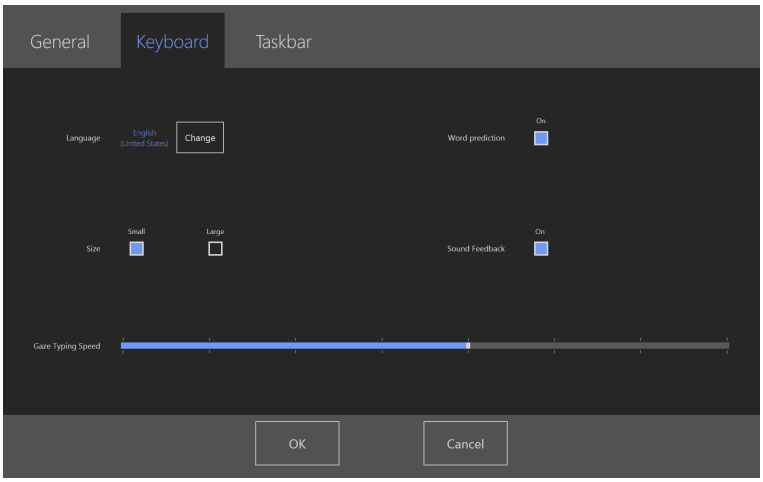
The zoom precision can be set to 8 different levels, just look at the desired position to change the setting. Changing the Precision will adjust how deep the zoom will go before executing the Task. The further to the right on the scale the deeper the zoom.

If the Precision is set to zero, no zooming will happen. It will be an instant click with Primary Selection. With Secondary Selection it will still be a zoom.

Speed

The zoom speed can be set to 8 different levels, just look at the desired position to change the setting. Changing the Speed will affect how fast the zoom is before the execution of the Task. The further to the right on the scale the faster the zoom.

6.2 The Keyboard Settings Tab



Language

The selected language keyboard layout is shown. Select the Change button to change the keyboard layout to another language. There are a number of different language keyboard layouts available.

Word Prediction

- **On** - Choose On to activate Word Prediction when using the Gaze keyboard. (Default)
- **Off** - Choose Off to deactivate Word Prediction when using the Gaze keyboard.

Size

- **Small** - Choose Small to use a smaller sized Gaze keyboard, will cover less then half the screen, see *Figure 6.1 Small Keyboard Layout (default), page 50*.
- **Large** - Choose Large to use a larger sized Gaze keyboard, will cover half of the screen, see *Figure 6.2 Large Keyboard Layout, page 51*.

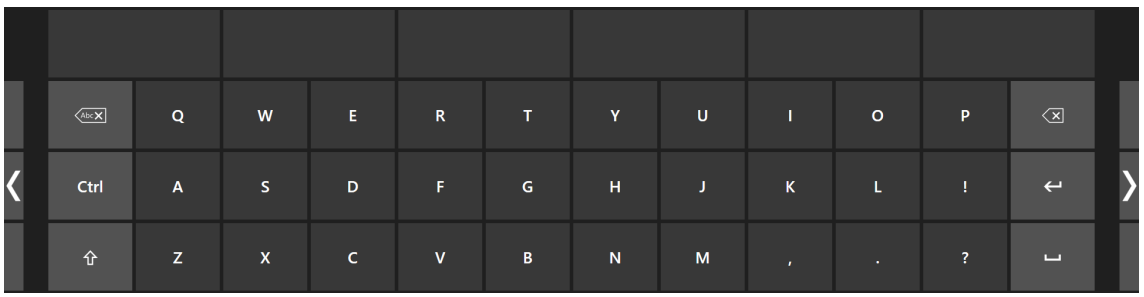


Figure 6.1 Small Keyboard Layout (default)

Figure 6.2 Large Keyboard Layout

Sound Feedback

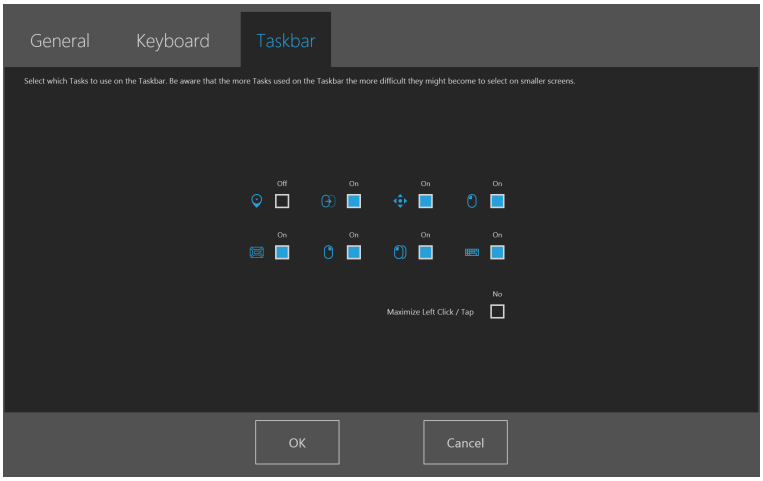
- **On** - Choose On to activate sound feedback when selecting a button on the Gaze keyboard.
- **Off** - Choose Off to deactivate sound feedback when selecting a button on the Gaze keyboard.

Gaze Typing Speed

The Gaze typing speed can be set to 8 different levels, just look at the desired position to change the setting. Changing the Gaze typing speed will adjust how long the user must fix their gaze on a button before the Task is executed. The scale presents lower Gaze typing speeds to the left and higher to the right.

To finish, select **OK** to save or **Cancel** to abort you changes.

6.3 The Taskbar Settings Tab



Select which tasks to use on the Taskbar. For more information about the tasks, see *4.2.3.2 Task Buttons, page 19*.

Be aware that the more Tasks used on the Taskbar the more difficult they might become to select on smaller screens.

Toggle the On/Off check box to On for each Task to enable it for use on the Taskbar.

Toggle the On/Off check box to Off for each Task to disable its use and visibility on the Taskbar.

6.3.1 Maximize Left Click/Tap

Activating Maximize Left Click/Tap can greatly expand the active region of the Left Click/Tap Task within the Taskbar, making it much easier to select the Left Click/Tap task.

Use the **Maximize Left Click/Tap** feature to expand and emphasize the Left Click/Tap Task on the Taskbar. If it is toggled to Off, all selected Tasks will be spaced evenly along the Taskbar. If it is toggled to On, all Tasks other than Left Click/Tap will retain their original/smaller sizes and the Left Click/Tap Task will fill the remaining space on the Taskbar.

7 Product Care

7.1 Temperature & Humidity

7.1.1 General Use

The Tobii PCEye Go is best kept in dry conditions at room temperature. The recommended range for temperature and the humidity value for the device is as follows:

- Temperature: 0°C to 40°C (32°F to 104°F)
- Humidity: Max 70% (no condensation on the device)

7.1.2 Transportation and Storage

For transportation and storage the recommended range for temperature and the humidity value for the device is as follows:

- Temperature: -40°C to 70°C (-40°F to 158°F)
- Humidity: 20% to 70% (no condensation on the device)

The Tobii PCEye Go is not waterproof or water resistant. The device should not be kept in excessively humid, damp or otherwise wet conditions. Do not submerge the device in water or in any other liquid. Be careful not to allow liquids to be spilled upon the device.

7.2 Cleaning

Before cleaning the Tobii PCEye Go device shut down the computer to which it is attached and unplug all cables. Use a soft, slightly damp, lint-free cloth. Avoid getting moisture in openings on the device. Don't use window cleaners, household cleaners, aerosol sprays, solvents, alcohol, ammonia, or abrasives to clean the device.

It is recommended that the device be cleaned regularly.

7.3 Transporting the Tobii PCEye Go

Disconnect the USB cable and use the carrying case accessory. The Tobii PCEye Go is relatively fragile and the filter can be scratched if not properly protected; be sure to take precautions to protect the device when it is to be carried and packed

When you transport the device for repair, shipment or traveling, use the original casing and packaging materials.

When the Tobii PCEye Go is attached to a monitor/laptop, do not carry the connected devices by solely gripping the Tobii PCEye Go. The Tobii PCEye Go will not hold the weight of the monitor/laptop, and the devices could break apart and fall, or topple and fall because of misbalanced weight, causing permanent damage to both. Tobii Technology will not be held liable for the resulting damage.

7.4 Disposing of the Tobii PCEye Go

Do not dispose of the Tobii PCEye Go in general household or office waste. Follow your local regulations for the disposal of electrical and electronic equipment.

Appendix A Support and Warranty

A1 Customer Support

For support, please contact your local representative or Support at Tobii. In order to receive assistance as quickly as possible, make sure you have access to your Tobii PCEye Go device and, if possible, an Internet connection. You should also be able to supply the serial number of the device, which you find on the back of the device or in the Tobii Gaze Interaction Settings, see *5.7 System Information, page 48*

For further product information and other support resources, please visit the Tobii website www.tobii.com.

A2 Warranty

Please read the Manufacturer's Warranty paper included in the package.

Please read this User's Manual carefully before using the device. The warranty is only valid if the device is used according to the User's Manual. Disassembling the Tobii PCEye Go device will void the warranty.

Keep the original packaging materials for the Tobii PCEye Go.

In case the device needs to be returned to Tobii Dynavox for Warranty related issues or repair, it is required that the original packaging (or equal equivalent) is used for shipping.

Appendix B Compliance Information

All Tobii PCEye Go are CE-marked, indicating compliance with the essential health and safety requirements set out in European Directives.

B1 FCC Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Modifications not expressly approved by Tobii Dynavox could void the user's authority to operate the equipment under FCC rules.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into a wall outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or experienced radio/TV technician for assistance.

B2 Industry Canada Statement

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

B3 CE Statement

The Tobii PCEye Go Device complies with the following Directives:

- 93/42/EEC (MDD) - Medical Device Directive
- 2011/65/EU (RoHS 2) - Restriction of Hazardous Substances Directive
- R&TTE 1999/5/EG (R&TTE) - European Radio equipment and Telecommunications Terminal Equipment Directive
- 2004/108/EC (EMC) - Electromagnetic Compatibility Directive
- 2006/95/EC (LVD) - Low Voltage Directive

B4 Electromagnetic Compatibility (EMC)

The Tobii PCEye Go has been tested and approved according to the Medical Device Directive (MDD) 93/42/EEC. Medical electrical equipment such as this requires special cautions regarding Electromagnetic Compatibility (EMC) and thus needs to be installed and put into service according to the information provided in this manual.

Using other cables and accessories than those provided and integrated in the device may affect EMC performance.

To maintain compliance regarding Electromagnetic Compatibility, the monitor to which the Tobii PCEye Go is attached shall be compliant with the International Safety Standard for Information Technology Equipment, IEC 60950.

B5 Standards

The Tobii PCEye Go complies with the following standards:

- IEC/EN 62471:2008, Photo Biological Safety of Lamps and Lamp Systems
- EMC Emission: EN 61000-6-3:2007, Generic Emission standard for residential, commercial and light industry environments
- EMC Immunity: EN 61000-6-1:2007, Generic Emission standard for residential, commercial and light industry environments
- EN 55024:1998+A1+A2, Information technology equipment. Immunity characteristics. Limits and methods of measurement
- IEC 60950–1:2005, Safety of information technology equipment
- FCC part 15, Class B

Appendix C Third Party Accessories

The use of Third Party products and accessories is at the user's own risk and the functioning of those products together with the Tobii PCEye Go is the responsibility of, and at the risk of, the Third Party Manufacturer.

Appendix D Technical Specifications

Technical Specifications	Tobii PCEye Go		
Working Distance	40 — 90 cm 18 — 35 inches		
Freedom of Head Movement[i] @ 70 cm / 27.5 inches (Width × Height)	50 × 36 cm 20 × 14 in		
Head Movement Speed (optimal)	11.8 in/s 30 cm/s		
Gaze Data Rate	30 Hz		
Gaze Accuracy[ii] Under ideal conditions Across 30 × 20 × 20 cm head box	 0.4° (Std dev 0.1°) 0.5° (Std dev 0.2°)		
Screen Size (16:9)	<22″	24″	27″
Distance (from screen)	45 — 85 cm 17.7 — 33.5 in	55 — 85 cm 21.6 — 33.5 in	65 — 85 cm 25.5 — 33.5 in
Track box size (Width × Height)	27 × 23 — 52 × 44 cm 10.6 × 9.1 — 20.5 × 17.3 in	35 × 28 — 52 × 44 cm 13.8 × 11 — 20.5 × 17.3 in	43 × 33 — 52 × 44 cm 16.9 × 13 — 20.5 × 17.3 in
Track box depth	40 cm 15.7 in	30 cm 11.8 in	20 cm 7.9 in
Gaze Precision (=sample to sample noise)[iii] Across 30 × 20 × 20 cm head box, without filter, on human eyes	0.4° (Std dev 0.1°)		
Mounting	Magnetic Mounting Plates		
Power Supply	Single USB 2.0		
Unit Weight	200 g 7.1 oz		
Unit Size (Length × Height × Depth)	184 × 28 × 23 mm 7.2 × 1.1 × 0.9 inches		
Works with (Operating System)	Windows Vista (SP2), Windows 7, Windows 8, Windows 8,1 or Windows 10		
System Requirements	CPU: 1GHz, 2 cores RAM: 2GB GPU: 60 MB video RAM, pixel shader version 2.0 or higher		

i. Freedom of head movement describes the volume in front of the tracker in which the user must have at least one of the eyes. The numbers are specified parallell/orthogonal to screen surface, assuming eye tracker is at 20 degree angle to screen.

ii. Gaze accuracy describes the angular average distance from the actual gaze point to the one measured by the eye tracker.
Accuracy under ideal conditions is measured with users placed in the center of the eye tracker track box with the head resting on a chin rest, and the room and screen illumination constant at 300 lux.

Accuracy across head box is measured with users after calibration systematically positioned at varying positions ranging from center of the head box up to ± 15 cm horizontal, ± 10 cm vertical and ± 10 cm distance.

Accuracy across varying background illumination is measured with users' head resting on a chin rest, and after calibration modifying background illumination from 1 to 1000 lux.

iii. Gaze Precision describes the point-to-point variation between individual gaze samples (here specified with binocular data, ie both eyes, and measured on artificial eyes). Gaze Precision with Stampe filter is with Stampe stage 2 noise-reduction algorithm applied to raw data (Stampe , Behavior Research Methods, Instruments & Computers 1993, 25 (2), 137-142).
Precision without filter is based on raw data, without any de-noising filter applied, either inside or outside the eye tracker.

Precision under ideal conditions is measured with users placed in the center of the eye tracker track box with the head resting on a chin rest, and the room and screen illumination constant at 300 lux.

Precision across head box is measured with users after calibration systematically positioned at varying positions ranging from center of the head box up to ± 15 cm horizontal, ± 10 cm vertical and ± 10 cm distance.

tobii dynavox

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Support for Your Tobii Dynavox Device

Get Help Online

See the product-specific Support page for your Tobii Dynavox device. It contains up-to-date information about issues and tips & tricks related to the product. Find our Support pages online at: *www.TobiiDynavox.com* or *www.myTobiiDynavox.com*.

Contact Your Sales Representative or Reseller

For questions or problems with your product, contact your Tobii Dynavox sales representative or authorized reseller for assistance. They are most familiar with your personal setup and can best help you with tips and product training. For contact details, visit *www.TobiiDynavox.com/contact*